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AIR 165

UPSC CSE 2023

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PERCENTAGE

THEORY

Percentage Formula

We should know the percentage formulas to calculate the percentages. The basic formula used to calculate the percentage is equal to the ratio of actual value to the total value and multiply it by 100. The formula of the percentages expressed as

$$\text{Percentage \%} = \frac{(\text{Actual value}) * 100}{\text{Total value}}$$

Percentage Formula in Case of a Fraction

$$(\text{Numerator}/\text{Denominator}) * 100$$

Percentage Change Formula

$$\text{Percentage change} = \frac{(\text{New value} - \text{Original value}) * 100}{\text{Original value}}$$

Percentage Increases Formula

When the new value is greater than the original value. The percentage change in the value signifies the percentage increase in the original number such that,

$$\text{Percentage Increase (\% Increase)} = \frac{\text{Increase in value} \times 100}{\text{original value}}$$

Increase in value = New value – original value.

Percentage Decreases Formula

When the new value is lesser than the original value. The percentage change in the value signifies the percentage decrease in the original number such that,

$$\text{Percentage Decrease (\% Decrease)} = \frac{\text{Decrease in value} * 100}{\text{original value}}$$

Here, Decrease in value = Original value - New value

TYPE -1

Q.1) What is the difference between 0.9 and 0.9%?

Q.2) 72% of a number is 90. What is the number?

Q.3) Thirty percent of a number when subtracted form 91, gives the number itself. Find the number.

Q.4) A fruit seller had some apples. He sells 40% apples and still has 420 apples. Originally, he had:

Q. 5) If X is 30% less than Y and Z is 50% less than Y, then Z is how much percentage less than X?

Q.6) If X is 80% more than Y, then Y is how much percentage less than X?

Q.7) Two numbers are less than a third number by 64% and 25% respectively. The percentage of first number less than second number is:

Q. 8) If 40% of a number is less than its 60% by 30, then the 20% of that number is:

Q.9) If all the sides of a square are increased by 20%, then the area is increased by _____

TYPE- 2

Q.1) In an election contest between A and B, A wins by the margin of 480 votes. If A gets 70% of the total votes. then total votes are

Q.2) In a class, if 60% of the students are boys and the number of girls is 36, then the number of boys is:

Q.3) If A is 40% less than B and C is 40% of the sum of A and B, then by what percentage is B greater than C

TYPE – 3

Q.1) The value of a motorcycle depreciates every year by 4%. What will be its value after 2 years, if its present value is Rs. 75,000?

Q.2) 21% of a number is 546. What will be 89% of that number?

Q.3) If each side of a rectangle is decreased by 11%, then its area will decrease by:

Q.4) A batsman scored 120 runs which included 15 fours and 2 sixes. What percent of runs scored by him running between the wickets?

Q.5) If 80% of 50% of A is equal to three times 25% of B, then A is what percentage more or less than B?

Q.6) If 50% of (P– Q) = 30% of (P + Q) and Q = x% of P, then the value of x is:

TYPE – 4

Q.1) A student has to obtain 40% of the maximum marks to pass. If she scored 80 marks and yet failed by 20 marks, then what were the maximum marks?

Q.2) The passing marks of an exam is 60% marks. A student gets 320 marks and yet fails by 16 marks. What are the maximum marks?

Q.3) In an examination it is required to get 40% of the aggregate marks to pass. A student gets 261 marks and is declared failed by 4% marks. What are the maximum aggregate marks a student can get?

Q.4) The price of milk is increased by 5%. By what percent should a shopkeeper reduce the consumption of milk in sweets so as not to increase the price of sweets?

Q.5) The price of a certain food items was raised by 12% in market. The consumption of the same food items was decreased from 250 kgs to 200 kgs. By how much percent will expenditure on food item fall in the market?

Q.6) The price of tea is reduced by 4%. How many kilograms of tea one can bought for the money which was sufficient to buy 48 kg of tea before?

TYPE – 5

Q.1) On 15th August Levi's was offering two successive discounts of 50% + 50%. How much discount does they actually offering?

Q.2) The side of a square is increased by P% then find % change in its area?

Q.3) The income of Raju is 20% more than his expenditure. If his income increases by 60% and his expenditure increases by 70%, then by what percent does his savings increase/decrease?

Q.4) Anu spends 90% of her income. If her expenditure increase by 25% and saving increase by 30%, then by what percent does her salary increase?

Q.5) If the price of tea is increased by 12.5%, find how much percent must a house holder reduce her consumption of tea by, so as not to increase the expenditure.

Q.6) If 2 Jio sim is offered free on purchase of 8 Jio sims priced Rs. 400 each, then find the effective discount percentage.

Q.7) If 15% of A = 20% of B, A is what percent of B?

Q.8) What is the ratio between two consecutive 5% increases and two consecutive 6% discounts?

TYPE – 6

Q.1) There are 30% monkeys, 40% deer, 10% wolves and 20% lions in a forest. If all 100 deer are captured from the forest, how many lions are there in the forest?

Q.2) Sonali invests 15% of her monthly salary in insurance policies. She spends 55% of her monthly salary in shopping and on household expenses. She saves the remaining amount of Rs.12,750. What is Sonali's monthly income?

Q. 3) Sandy donated 13% of her salary to an organization working for the blind people, 12% of her salary to the orphanage, 14% of her salary, the institution working for the physically challenged people, and 16% of her salary The institution helping the medical aid. The remaining amount of salary Rs 24345 is deposited in the bank for monthly expenditure. Find out the amount donated in the orphanage.

Q. 4) A small scale business has the following expense: procurement (25%), Employees' salary (25%), and 50% for maintenance. If the business pays a total salary of Rs. 2,00,000 then what is its maintenance expense?

Q.5) The present population of a village is 28000. If it increases at the rate of 5% per annum, population after 2 years will be:

TYPE – 7

Q.1) If 90% of (a – b) is equal to 60% of (a + b), what percentage of a is b?

Q.2) The total number of boys in a college is 16% more than the total number of girls in a college. What is the ratio of the total number of boys compared to girls in that college?

Q.3) The price of a unit in electricity bills is increased by 2%. Approximately by what percent person should reduce his consumption so as not to increase his monthly expenditure?

TYPE - 8

Q.1) A and B got an equal number of votes. 5% of the votes which B got were disqualified later. A won the election by 14925 votes. Find the total votes which were qualified.

Q.2) In an election between two candidates, 80% of the voters cast their votes, out of which 5% votes were declared invalid. A candidate got 13680 votes which were 60% of the valid votes. Then, what is the total number of voters enrolled in that election?

Q.3) There were two candidates in an election, 10% of voters did not cast their vote and 48 votes

were found invalid. The winning candidate got 53% of the total votes and won by 304 votes. Find the total number of voters enrolled.

Q.4) Fresh watermelon contains 60% water. Dry watermelon contains 30% water. From 1 Quintals fresh Watermelon, approximately how many kgs of Dry Watermelon can be obtained?

Q.5) Fresh Fruit contains 68% of water while dry Fruit contains 20% of water. How much quantity of dry Fruit can be obtained from 200 kg of Fresh Fruits?

TYPE – 9

Q.1) The length and the breadth of a rectangle are changed by +20% and by –10%, respectively. What is the percentage change in the area of the rectangle?

Q.2) The population of a town is 5,00,000. The rate of increase is 20% per annum. Find the population at the start of the third year.

Q.3) The population of a town is 6000. If the number of males increases by 10% and the number of females increases by 20%, then the population becomes 6800. Find the population of females in the town.

Q.4) If the price of an article is decreased by 20% and then the new price is increased by 25%, then what is the net change in the price?

Q.5) Two candidates X and Y contested an election. 80% of voters cast their vote. and there were no invalid votes. There was no NOTA (None of the above) option. X got 56% of the votes cast and won by 1440 votes. What is the total number of voters in the voters list? (UPSC 2022)

Q.6) As a result of a 25% hike in the price of rice per kg, a person is able to purchase 6 kg less rice for Rs 1,200. What was the original price of rice per kg? (UPSC 2020)

TYPE- 10

Q.1) In a school, 50% students play cricket and 40% play football. if 10% of students play both the games, then what per cent students play neither cricket not football ?

Q.2) In a school having 200 students, 120 play football, 70 play cricket, and 60 play both. How many play neither football nor cricket?

By Satyam Sir

Ratio and Proportion

TYPE – 1

1. The ratio of two numbers is 3:8 and their difference is 115. The smaller of the two numbers is –
(a) 184
(b) 194
(c) 69
(d) 59

2. Four numbers are in ratio 1:2:3:4. Their sum is 16. The sum of the first and fourth number is
(a) 5
(b) 8
(c) 10
(d) 80

3. The sum of two numbers is 40 and their difference is 4. The ratio of the numbers is
(a) 21:19
(b) 22:9
(c) 11:9
(d) 11:18

4. The product of two positive integer is 1575 and their ratio is 9:7. The smaller integer is
(a) 25
(b) 35
(c) 45
(d) 70

5. The sum of three numbers is 116. The ratio of second to the third is 9:16 and the first to the third is 1:4. The second number is
(a) 30
(b) 32
(c) 34
(d) 36

6. On of the three numbers, the ratio of the first and the second is 8:9 and that of the second and third is 3:4. If the product of the first and third number is 2400, then the second number is
(a) 45
(b) 40
(c) 30
(d) 55

7. Two numbers are in the ratio 2:3. If 2 is subtracted from the first and 2 is added to the second, the ratio becomes 1:2. The sum of the numbers is
(a) 30
(b) 28
(c) 24
(d) 10

8. If A : B = 3 : 4, B : C = 5 : 7 and C : D = 8 : 9 then A : D is equal to
(a) 3 : 7
(b) 7 : 3
(c) 21 : 10
(d) 10 : 21

9. If $p : q : r = 1 : 2 : 4$, then $5p2 + q2 + r\,2$ is equal to
(a) 25
(b) 20
(c) 35
(d) 45

10. If a:b = 2/9 : 1/3
b:c = 2/7 : 5/14
d:c = 7/10 : 3/5
then $a : b : c : d$ is
(a) 4 : 6 : 7 : 9
(b) 16 : 24 : 30 : 35
(c) 8 : 12 : 15 : 7
(d) 30 : 35 : 24 : 16

11. 94 is divided into two parts in such a way that the fifth part of the first and the eighth part of the second are in the ratio 3 : 4. The first part is:
(a) 30

(b) 36
(c) 40
(d) 28

12. If $x : y = 4 : 5$, then $(3x + y) : (5x + 3y) =$
(a) 3 : 5
(b) 5 : 3
(c) 17 : 35
(d) 35 : 17

13. If 2A=3B = 4C, then A: B: C is:
(a) 2 : 3 : 4
(b) 4 : 3 : 2
(c) 6 : 4 : 3
(d) 3 : 4 : 6

14. There are three numbers A, B, C such that twice A is equal to thrice B and four times B is equal to five times C. Then the ratio between A and C is
(a) 3 : 4
(b) 8 : 15
(c) 15 : 8
(d) 4 : 3

15. A fruit seller sold big, medium and small sized apples for RS. 15, RS. 10 and RS. 5 respectively. The total number of apples sold were in the ratio 3 : 2 : 5. Find the average cost of an apple.
(a) 8
(b) 10
(c) 9
(d) 7

16. The ratio of boys and girls in a college is 5 : 3. If 50 boys leave the college and 50 girls join the college, the ratio becomes 9 : 7. The number of boys in the college is
(a) 300
(b) 400
(c) 500
(d) 600

17. 12 monkeys can eat 12 bananas in 12 minutes. In how many minutes can 4 monkeys eat 4 bananas?
(a) 10
(b) 12
(c) 4
(d) 8

TYPE- 2

1. If $x : y = 3 : 4$, then the value of $(4x – y) : (2x + 3y)$ is
(a) 4 : 9
(b) 8 : 9
(c) 4 : 3
(d) 8 : 3

2. There is a ratio of 5 : 4 between two numbers. If 40 per cent of the first is 12, then 50% of the second number is
(a) 12
(b) 24
(c) 18
(d) 20

3. In a regiment the ratio between the number of officers to soldiers was 3 : 31 before battle. In a battle 6 officers and 22 soldiers were killed and the ratio became 1 : 13, the number of officers in the regiment before battle was
(a) 31
(b) 38
(c) 21
(d) 28

4. Sum of two numbers is thrice their difference. Their ratio is
(a) 1:2
(b) 2:1
(c) 3:1
(d) 1:3

5. If $(a + b) : (b + c) : (c + a) = 6 : 7 : 8$ and $(a + b + c) = 14$, then the value of c is
(a) 6
(b) 7
(c) 8
(d) 14

6. The ratio of the number of boys and girls in a school is 8 : 12. If 50% of boys and 25% of girls are getting scholarships for their studies, what is the percentage of school students who are not getting any scholarships?
(a) 65

(b) 66
(c) 67
(d) 68

7. In an ornament the ratio of gold and copper is 3 : 2. The percentage of gold in the ornament is:
(a) 60
(b) 40
(c) 30
(d) 20

8. A milkman makes 20% profit by selling milk mixed with water at RS9 per litre. If the cost price of 1 litre pure milk is RS10, then the ratio of milk and water in the mixture is
(a) 3 : 1
(b) 4 : 1
(c) 3 : 2
(d) 4 : 3

TYPE- 3

1. The ratio of ages of two students is 3 : 2. One is older to the other by 5 years. What is the age of the younger student?
(a) 2 years
(b) 10 years
(c) 2.5 years
(d) 15 years

2. The ratio of present age of two brothers is 1 : 2 and 5 years back. the ratio was 1 : 3. What will be the ratio of their age after 5 years?
(a) 1 : 4
(b) 2 : 3
(c) 3 : 5
(d) 5 : 6

3. The sum of the age of a father and his son is 100 years now. 5 years ago their age were in the ratio of 2 : 1. The ratio of the age of father and son after 10 years will be
(a) 5 : 3
(b) 4 : 3
(c) 10 : 7
(d) 3 : 5

4. At present, the ratio of the age of Maya and Chhaya is 6 : 5 and fifteen years from now, the ratio will get changed to 9 : 8. Maya's present age is
(a) 21 years
(b) 24 years
(c) 30 years
(d) 40 years

5. Harsha is 40 years old and Ritu is 60 years old. How many years ago was the ratio of their ages 3 : 5 ?
(a) 10 years
(b) 20 years
(c) 37 years
(d) 5 years

6. The average age of boys in the class is twice the number of girls in the class. The ratio of boys and girls in the class of 50 is 4 : 1. The total of the ages (in years) of the boys in the class is
(a) 2000
(b) 2500
(c) 800
(d) 400

7. The present age of A and B are in the ratio 4 : 5 and after 5 years they will be in the ratio 5 : 6. The present age of A is
(a) 10 years
(b) 20 years
(c) 25 years
(d) 40 years

8. The present age of two persons are 36 and 50 years respectively. If after *n* years the ratio of their age will be 3 : 4, then the value of *n* is
(a) 4
(b) 7
(c) 6
(d) 3

9. My grandfather was 9 times older than me 16 years ago. He will be 3 times of my age 8 years from now. Eight years ago, the ratio of my age to that of my grandfather was
(a) 3 : 8
(b) 2 : 5
(c) 1 : 2
(d) 1 : 5

TYPE 4

1. In a 45 litres mixture of milk and water, the ratio of the milk to water is 2 : 1. When some quantity of water is added to the mixture, this ratio becomes 1 : 2. The quantity of water added is
(a) 10 litres
(b) 21 litres
(c) 35 litres
(d) 45 litres

2. Two numbers are in the ratio 5 : 7. On diminishing each of them by 40, they become in the ratio 17 : 27. The difference of the numbers is:
(a) 18
(b) 52
(c) 137
(d) 50

3. Three numbers are in the ratio 5 : 6 : 7. If the product of the numbers is 5670, then the greatest number is
(a) 15
(b) 18
(c) 21
(d) 28

4. If the sum of two quantities is equal to three times their difference, then the ratio of the two quantities is
(a) 1 : 3
(b) 3 : 1
(c) 2 : 1
(d) 2 : 3

5. What number should be subtracted from both terms of the ratio 15 : 19 in order to make it 3 : 4 ?
(a) 9
(b) 6
(c) 5
(d) 3

TYPE 5

1. Two numbers are in the ratio 4 : 5 and their L.C.M. is 180. The smaller number is
(a) 9
(b) 15
(c) 36
(d) 45

2. Two numbers are in the ratio 3 : 4 and their LCM is 180. The first number is
(a) 15
(b) 60
(c) 36
(d) 45

3. The HCF of two numbers 306,657 is 9. Find the LCM of these two numbers.
(a) 22338
(b) 20875
(c) 43908
(d) 39876

TYPE 6

1. A and B have money in the ratio 2 : 1. If A gives 2 to B, the money will be in the ratio 1 : 1. What were the initial amounts they had?
(a) 12 and 6
(b) 16 and 8
(c) 8 and 4
(d) 6 and 3

2. What number should be added to or subtracted from each term of the ratio 17 : 24 so that it becomes equal to 1 : 2 ?
(a) 5 is subtracted
(b) 10 is added
(c) 7 is added
(d) 10 is subtracted

3. Ram got twice as many marks in English as in Science. His total marks in English, Science and Maths are 180. If the ratio of his marks in English and Maths is 2 : 3, what is his marks in Science?
(a) 30
(b) 60
(c) 72
(d) 90

TYPE 7

1. Zinc and copper are in the ratio of 5 : 3 in 200 gm of an alloy. How much grams of copper be added to make the ratio as 3 : 5?
(a) 133 1/3
(b)1/200
(c) 72
(d) 66

2. The ratio of copper and zinc in brass is 13 : 7. How much zinc will be there in 100 kg of brass?
(a) 20 kg.
(b) 55 kg.
(c) 35 kg.
(d) 40 kg

3. In 30 litres mixture of acid, the ratio of acid and water is 2 : 3 . What amount of water should be added to the mixture so that the ratio of acid and water becomes 2 : 5 ?
(a) 10 litres
(b) 15 litres
(c) 18 litres
(d) 12 litres

4. There are three containers of equal capacity. The ratio of Sulphuric acid to water in the first container is 3 : 2, that in the second container is 7 : 3 and in the third container it is 11 :4. If all the liquids are mixed together, then the ratio of Sulphuric acid to water in the mixture will be :
(a) 61 : 29
(b) 61 : 28
(c) 60 : 29
(d) 59 : 29

5. A can contains a mixture of two liquids A and B in the ratio 7 : 5. When 9 litres of mixture are drawn off and the can is filled with B, the ratio of A and B becomes 7 : 9. Litres of liquid A contained by the can initially was
(a) 10
(b) 20
(c) 21
(d) 25

TYPE 8

1. The income of A, B and C are in the ratio 3 : 7 : 4 and their expenses in the ratio 4 : 3 : 5. If A saves 300 out of an income of 2,400, the savings of B and C are :
(a) 4025 and 575
(b) 1575 and 2625
(c) 2750 and 1525
(d) 3725 and 1525

2. The ratio of income of two persons is 5 : 3 and that of their expenditures is 9 : 5. Find the income of each person, if they save 1,300 and 900 respectively.
(a) 4,000, 2,400
(b) 3,000, 1,800
(c) 5,000, 3,000
(d) 4,500 2,700

3. Incomes of *x* and *y* are in the ratio 4:3. Their expenditures are in the ratio 12:7. Both save Rs. 3200at the end of the month, then the income of *x* is
(a) 8000
(b) 6000
(c) 2000
(d) 4000

4. A and B have their monthly incomes in the ratio 8 : 5, while their monthly expenditures are in the ratio 5 : 3. If they have saved Rs. 12,000 and Rs. 10,000 monthly respectively, then the difference in their monthly incomes is
(a) Rs. 52,000
(b) Rs. 42,000
(c) Rs. 44,000
(d) Rs. 46,000

TYPE 9

1. 180 contained in a box consists of one rupee, 50 paise and 25 paise coins in the ratio 2 : 3 : 4. What is the number of 50 paise coins?
(a) 60
(b) 120
(c) 150
(d) 180

2. If 378 coins consist of rupees, 50 paise and 25 paise coins, whose values are in the ratio of 13 : 11 : 7, the number of 50 paise coins will be :
(a) 132

(b) 128
(c) 136
(d) 133

3. A box contains 1-rupee, 50-paise and 25-paise coins in the ratio 8 :5 : 3. If the total amount of money in the box is 112.50, the number of 50-paise coins is
(a) 80
(b) 50
(c) 30
(d) 42

4. A box contains 420 coins in rupee, 50 paise and 20 paise coins. The ratio of their rupee values being 13 : 11 : 7. The number of 50 paise coins is
(a) 42
(b) 78
(c) 66
(d) 132

PARTNERSHIP

TYPE 1

Q.1) By mistake, instead of dividing 117 among A, B and C in the ratio ½ :1/3 : ¼ . It was divided in the ratio of 2 : 3 : 4. Who gains the most and by how much?
(a) A, 28
(b) B, 3
(c) C, 20
(d) C, 25

Q.2) If a sum of money is to be divided among A, B, C such that A's share is equal to twice B's share and B's share is 4 times C's share, then their shares are in the ratio:
(a) 1 : 2 : 4
(b) 1 : 4 : 1
(c) 8 : 4 : 1
(d) 2 : 4 : 1

Q.3) Divide 7,500 among A, B and C such that A's share to B's share is in ratio 5 : 2 and B's share to C's share is in the ratio 7 : 13. How much will B receive?
(a) 1,400
(b) 3,500
(c) 2,600
(d) 7,000

Q.4) A sum of 1240 is distributed among A, B and C such that the ratio of amount received by A and B is 6 : 5 and that of B and C is 10 : 9 repectively. Find the share of C.
(a) 480
(b) 360
(c) 400
(d) 630

TYPE 2

Q.1) A publication makes a profit of 9,00,000, 20% of which is paid as taxes. If the rest is divided among the partners P' Q and R in the ratio of 1 : $1\frac{1}{2}$: 2, then the shares of P, Q and R are respectively:
(a) `2,40,000; `3,20,000; `1,60,000
(b) `3,20,000;`2,40,000; `1,60,000
(c) `1,60,000;`3,20,000; `2,40,000
(d) `1,60,000;`2,40,000; `3,20,000

Q.2) Three partners A, B and C share profit such that three times the share of A is equal to two times the share of B and equal to 12 times the share of C. What is the ratio of the profits of A, B and C respectively?
(a) 3:2:12
(b) 12:2:3
(c) 4:6:1
(d) 1:6:4

Q.3) Profit of Rs 42,500 has to be divided between three partners A, B and C in the ratio 3:5:9. How much (in Rs) does A get?
(a) 12500
(b) 9500
(c) 22500
(d) 7500

Q.4) Keshav, Surjeet and Thomas started a business with investments in the ratio 2 : 3 : 4. The ratio of their period of investment is 5 : 6 : 9. Twenty percent of the profit was spent on rent and maintenance of the office. Remaining profit was distributed among themselves. If the difference in the shares of profit of Keshav and Surjeet is Rs. 7264, then how much is the total profit (in Rs.)?
(a) 51060
(b) 58112
(c) 46490
(d) 72640

Q.5) A, B and C invested their capitals in the ratio 2 : 3 : 5. The ratio of months for which they invested is 4 : 2 : 3, respectively. If the difference between the profit shares of A and B is Rs. 1,86,000, then C's share of profit (in Rs.) is ?

(a) 10,29,500
(b) 13,95,000
(c) 15,39,000
(d) 19,35,000

Q.6) A started a business with a capital of Rs. 54,000 and admitted B and C after 4 months and 6 months, respectively. At the end of the year, the profit was divided among the three in the ratio 1 : 4 : 5. What is the sum (in Rs.) of the capitals invested by B and C?
(a) 8,46,000
(b) 8,60,400
(c) 8,64,000
(d) 8,40,060

TYPE 3

Q.1) P and Q start a shop with a capital of Rs. 1,50,000 and Rs. 4,50,000, respectively. After a year, out of the profit of Rs. 2,00,000, P gets his share of profit plus some money as his salary that is not a part of the profit. It P gets a total of Rs.90,000, what is the amount of salary (in Rs.) that he received?
(a) 40,000
(b) 20,000
(c) 50,000
(d) 25,000

Q.2) The ratio of the investments of A and B in a business is 7 : 5, and the ratio of their profits at the end of a year is 2 : 5. If A invested the money for 6 months, then for how much time (in months) has B invested his money?
(a) 12
(b) 18
(c) 21
(d) 24

Q.3) A, B and C started a business in partnership. Initially. A invested Rs. 29,000, while B and C invested Rs. 25,000 each. After 4 months, A withdrew Rs. 3,000. After 2 more months, C invested Rs.12,000 more. Find the share of C in the profit of Rs.33,200 at the end of the year.
(a) 10,800
(b) 10,000
(c) 11,067
(d) 12,400

TYPE 4

Q.1) A man started off a business with a certain capital amount. In the first year, he earned 60% profit and donated 50% of the total capital (initial amount + profit).He followed the same procedure with the remaining capital after the second and the third year. If at the end of the three years, he is left with Rs. 15,360, what was the initial amount (in Rs.) with which the man started his business?
(a) 20,000
(b) 30,000
(c) 25,000
(d) 32,000

Q.2) A and B had a joint business in which A invested Rs. 60,000 in the business for one year. After 3 months B invested Rs. 80,000. At the beginning of the second year, A invested Rs. 30,000 more and B withdrew Rs. 5,000. At the end of two years, profit earned by A Rs. 35,880. What is the profit (in Rs.) earned by B, if they distributed half of the total profit equally and rest in the capital ratio?
(a) 69,920
(b) 38,060
(c) 34,040
(d) 58,940

Q.3) A and B entered into a partnership with investment in the ratio 3:5, after a few months, A withdrew and collected back his money. At the end of the year, they received profit in the ratio 2:5. After how many months did A withdraw?
(a) 6
(b) 9
(c) 7
(d) 8

Q.4) A, B and C started a business with initial investments of Rs. 20000, Rs. 25000 and Rs.10000, respectively. After 5 months from start, A invested Rs. 4000 more. After 6 months from

start, C invested Rs. 8000 more. After 4 months from start, B withdrew Rs. 8000. At the end of the year, they will receive a profit of Rs. 'x'. In what ratio they will share the profits?
(a) 67 : 59 : 42
(b) 71 : 57 : 42
(c) 71 : 59 : 42
(d) 59 : 68 : 42

TYPE 5

Q.1) A, B and C started a business with the investment of Rs. 100000, Rs. 140000 and Rs.200000 respectively. After 3 months, C left the business. 7 months after C left the business, B also left the business. B and C took their investments with them. At the end of the year, C received his share of profit as Rs. 1155. What is the total share of profits of A and B?
(a) 6150
(b) 4995
(c) 5555
(d) 5005

Q.2) Sachin and Virat started a company in which Sachin invested Rs. 700000 and Virat invested Rs. 800000. Sachin is the working partner and draws a fixed monthly salary of Rs. 20000 (which he draws from the revenues of the company). Virat only offers consultancy services to the business and charges 15 % of the profit earned by the company.
The revenue made by the company at the end of its first year is Rs. 3500000. The profit made by the company is 30 percent of its revenues. What is the difference between the amount earned by Sachin and Virat at the end of the first year?
(a) Rs. 28500
(b) Rs. 25000
(c) Rs. 23000
(d) Rs. 20500

Q.3) A, B and C invested their capital in the Ratio of 2:3:5. The ratio of months for which A, B and C invested is 4:2:3. If C gets a profit which is Rs. 1,47,000 more than that if A, then B's share in the profit is?
(a) Rs. 1,26,000
(b) Rs. 1,68,000
(c) Rs. 1,05,000
(d) Rs. 1,89,000

Q.4) A started a business with a capital of Rs. 54000 and admitted B and C after 4 months and 6 months respectively. At the end of the year, the profit was divided in the ratio 1:4:5. What is the difference between the capitals between the capital invested by B and C?
(a) Rs 1,08,000
(b) Rs. 1,62,000
(c) Rs. 2,16,000
(d) Rs. 3,24,000

TYPE 6

Q.1) Three persons A, B, and C invest in a business in the ratio of 5 : 6 : 4. If A and C invested for one year, then B should invest for how many months if he wants to receive 25% of the total profit at the end of one year?
(a) 4 months
(b) 6 months
(c) 3 months
(d) 9 months
(e) None of these

Q.2) In a joint venture company, A and B invested Rs. 32000 and Rs. 56000 respectively. A received Rs. 1000 per month as salary for managing the business and the remaining profit was divided in the ratio of their investments. At the end of year A received a total of Rs. 20000. How much did B get?
(a) Rs. 14000
(b) Rs. 16000
(c) Rs. 22000
(d) Rs. 35000
(e) None of these

Q.3) Rony, Geeta and Suraj started a business. Rony invested 1/4th of the capital for 1/2 time, Geeta invested 1/8th of the capital for 1/4 time and Suraj invested the remaining capital for whole time. Find the share of Suraj in the total profit of Rs.124000?
(a) Rs. 58800

(b) Rs. 56000
(c) Rs. 62000
(d) Rs. 99200
(e) none of these

Q.4) Puneet, Sumit and Amit started a business jointly investing Rs. 11 lakh, Rs. 16.5 lakh and Rs. 8.25 lakh respectively. The profit earned by them in the business at the end of three years was Rs. 19.5 lakh. What will be the half of Amit's share in the profit?
(a) Rs. 4.5 lakh
(b) Rs. 2.25 lakh
(c) Rs. 2.5 lakh
(d) Rs. 3.75 lakh
(e) None of these

Q.5) Piyush invested an amount of Rs. 60000 to start a software business. After six months, Kamal joined him with an amount of Rs. 90000. After one year from the commencement of the business, Piyush put in an additional amount of Rs. 20000. At the end of 3 yr, they earned a profit of Rs. 7120000. What is Piyush's share in the profit?
(a) Rs. 3520000
(b) Rs. 3650000
(c) Rs. 3440000
(d) Rs. 4140000
(e) None of these

PROFIT AND LOSS

RULE 1 : If S.P > C.P. then there will be profit

Profit = S.P. – C.P.

$$\textbf{Profit\%} = \frac{\textbf{Profit} * 100}{\textbf{C.P.}}$$

RULE 2 : If C.P > S.P., then there will be Loss

Loss = C.P. – S.P., $\text{Loss\%} = \frac{\text{Loss} * \text{C P}}{100}$

Successive Profits: If A sells an article to B at a% profit and B sells it to C at b% profit.

OR

If a% and b% are two successive profits

then **Total Profit% =** $\left(\textbf{a+b} + \frac{ab}{100}\right)$

A dishonest shopkeeper sells his goods at C.P. but uses false weight, then his

$$= \textbf{Gain\%} = \frac{\textbf{True weight} - \textbf{False weight}}{\textbf{False weight}} * 100$$

Scope of questions : Asked questions are based on per cent Profit/Loss. cost price, selling price, price after increase or decrease in rates, cost price of certain number of things equal to S.P. of certain number of, how much price to increase to get certain profit.

Way to success : Practice is most important here, Remember all calculations on Profit/Loss are on cost price and not on selling price.

TYPE 1

Q.1) A man buys a cycle for 1400 and sells it at a loss of 15%. What is the selling price of the cycle?
(a) 1202
(b) 1190
(c) 1160
(d) 1000

Q.2) On selling an article for 651, there is a loss of 7%. The cost price of that article is
(a) 744
(b) 751
(c) 793
(d) 700

Q.3) A milkman bought 70 litres of milk for 630 and added 5 litres of water. If he sells it at 9.00 per litre, his profit percentage is
(a) $8\frac{1}{5}\%$
(b) 7%
(c) $8\frac{2}{5}\%$
(d) $7\frac{1}{7}\%$

Q.4) In terms of percentage profit, which is the best transaction?

C.P. (in)	*Profit (In)*
(I) 36	17
(II) 50	24
(III) 40	19
(IV) 60	29

(a) I
(b) II
(c) III
(d) IV

Q. 5) A man bought an old typewriter for RS. 1200 and spent RS.200 on its repair. He sold it for RS.1680. His profit per cent is:
(a) 20%
(b) 10%
(c) 8%
(d) 16%

Q.6) If the cost price is 95% of the selling price, what is the profit percent?
(a) 4%
(b) 4.75%
(c) 5%
(d) 5.26%

Q.7) A merchant buys an article for RS.27 and sells it at a profit of 10% of the selling price. The selling price of the article is:
(a) Rs. 29.70
(b) Rs.30
(c) Rs.37
(d) Rs. 32

Q.8) Krishnan bought a camera and paid 20% less than its original price. He sold it at 40% profit on the price he had paid. The percentage of profit earned by Krishnan on the original price was
(a) 22%
(b) 32%
(c) 12%
(d) 15%

Q.9) By what per cent must the cost price be raised in fixing the sale price in order that there may be a profit of 20% after allowing a commission of 10% ?
(a) 25%
(b) $133\frac{1}{3}\%$
(c) $33\frac{1}{3}\%$
(d) 30%

Q.10) By selling an article, a man makes a profit of 25% of its selling price. His profit per cent is
(a) 20%
(b) 25%
(c) $16\frac{2}{3}\%$
(d) $33\frac{1}{3}\%$

Q.11) If there is a profit of 20% on the cost price of an article, the percentage of profit calculated on its selling price will be?
(a) 24
(b) 20
(c) $16\frac{2}{3}\%$
(d) $8\frac{1}{3}\%$

Q.12) A salesman expects a gain of 13% on his cost price. If in a month his sale was RS. 7,91,000, what was his profit?
(a) RS. 85,659
(b) RS. 88,300
(c) RS. 91,000
(d) RS. 97,786

Q.13) By selling 33 metres of cloth, a person gains the cost of 11 metres. Find his gain%.
(a) $33\frac{1}{3}\%$
(b) $33\frac{1}{2}\%$
(c) 33%
(d) $34\frac{1}{3}\%$

Q.14) While selling to the retailer, a company allows 30% discount on the marked price of their products. If the retailer sells those products at marked price, his profit % will be:
(a) 30%
(b) $42\frac{1}{7}\%$
(c) $42\frac{6}{7}\%$
(d) 40%

Q.15) A merchant purchases a wrist watch for RS 450 and fixes its list price in such a way that after allowing a discount of 10%, he earns a profit of 20%. Then the list price of the watch is
(a) Rs 650
(b) Rs 700
(c) Rs 550
(d) Rs 600

Q.16) The total cost of 8 buckets and 5 mugs is RS. 92 and the total cost of 5 buckets and 8 mugs is RS. 77. Find the cost of 2 mugs and 3 buckets.
(a) RS.35
(b) RS.70
(c) RS.30
(d) RS.38

TYPE 2

Q.1) If books bought at prices from RS.150 to RS.300 are sold at prices ranging from 250 to 350, what is the greatest possible profit that might be made in selling 15 books?
(a) Cannot be determined
(b) 750
(c) 4,250
(d) 3,000

Q.2) If there is a profit of 20% on the cost price, the percentage of profit on the sale price is?
(a) $16\frac{2}{3}\%$
(b) 12%
(c) $15\frac{1}{3}\%$
(d) 16%

Q.3) Nisha bought a number of oranges at 2 for a rupee and an equal number at 3 for a rupee. To make a profit of 20% she should sell a dozen for
(a) Rs.6
(b) Rs. 8
(c) Rs.10
(d) Rs. 12

TYPE 3

Q.1) Nisha bought a number of oranges at RS.2 for a rupee and an equal number at RS.3 for a rupee. To make a profit of 20% she should sell a dozen for
(a) RS.6
(b) RS.8
(c) RS.10
(d) RS.12

Q.2) The C.P of 10 artices is equal to the S.P. of 15 articles. What is the profit or loss percentage?
(a) 25.5%
(b) 35%
(c) 10%
(d) 33.3%

Q. 3) The selling price of 6 bananas is equal to the cost price of 8 bananas. Then the percentage of profit is:
(a) 20
(b) 33.33
(c) 25
(d) 30

Q.4) By selling a bag at Rs. 230, profit of 15% is made. The selling price of the bag, when it is sold at 20% profit would be

(a) Rs. 250
(b) Rs. 205
(c) Rs. 240
(d) Rs. 200

Q.5) The per cent profit made when an article is sold for Rs. 78 is twice as much as when it is sold for Rs. 69. The cost price of the article is
(a) Rs. 60
(b) Rs. 51
(c) Rs. 55.50
(d) Rs. 70

Q.6) A sold an article to B at 20% profit and B sold to C at 15% loss. If A sold it to C at the selling price of B, then A would make
(a) 5% profit
(b) 2% profit
(c) 2% loss
(d) 5% loss

Q.7) A shopkeeper buys 144 items at 90 paise each. On the way 20 items are broken. He sells the remainder at Rs. 1.20 each. His gain per cent correct to one place of decimal is
(a) 13.8%
(b) 14.6%
(c) 14.8%
(d) 15.8%

Q.8) A shopkeeper buys two cameras at the same price. He sells one camera at a profit of 18% and the other at a price 10% less than the selling price of the first. His total profit or loss per cent is
(a) 12.1% profit
(b) 12.1% loss
(c) 12.2% profit
(d) 11.1% loss

Q.9) A shopkeeper sold his goods at half the list price and thus lost 20%. If he had sold on the listed price, his gain percentage would be
(a) 60 %
(b) 20 %
(c) 72 %
(d) 35 %

Q.10) Ten articles were bought for Rs.8, and sold at 8 for Rs. 10. The gain percent is
(a) 54.75%
(b) 57.25%
(c) 56.25%
(d) 55%

Q.11) If a shop–keeper purchases cashew nut at Rs. 250 per kg. and sells it at Rs. 10 per 50 grams, then he will have
(a) 25% Loss
(b) 25% Profit
(c) 20% Profit
(d) 20% Loss

Q.12) A shopkeeper sells rice at 10% profit and uses weight 30% less than the actual measure. His gain per cent is
(a) $57\frac{2}{3}\%$
(b) $57\frac{1}{7}\%$
(c) $57\frac{2}{5}\%$
(d) $57\frac{3}{7}\%$

Q.13) If the sale price of an item is RS 590 with a profit of 18%, then, the cost price is
(a) Rs 524
(b) Rs 506
(c) Rs 500
(d) Rs 510

Q.14) Neha sold lipstick to Saloni at a profit of 15% and Saloni sold to Rashmi at a loss of 15%. If Rashmi paid RS. 391 for it, then the amount paid by Neha is
(a) Rs 405
(b) Rs 398
(c) Rs 400
(d) Rs 412

Q.15) By giving a 20% discount, a shopkeeper earns 20 % profit. What is his profit, if he sells the item at a 5% discount?
(a) 48.6%
(b) 24.5%
(c) 52.4%
(d) 42.5%

Q.16) The ratio of SP and CP of television is 9:4 . Find the ratio between the profit and the cost price of television?
(a) 3:2
(b) 2:3
(c) 5:4
(d) 4:5

Q.17) A person bought some articles at rate of 11 for Rs 10 and sold them at the rate of 10 for Rs 11 Find the profit/loss %.?
(a) 10%
(b) 11%
(c) 21%
(d) 100%

Q.18) A person bought some articles at rate of 6 for Rs 5 and sold them at the rate of 5 for Rs 6. Find the profit or loss?
(a) 30%
(b) 33.33%
(c) 35 %
(d) 44%

TYPE 4

Q.1) A person bought 16 articles for Rs 25 and sold 5 articles for Rs 12 so overall he gains Rs 134. Find the number of articles he bought?
(a) 160
(b) 190
(c) 220
(d) 175

Q.2) A man buys a certain number of oranges at 20 for RS60 and an equal number at 30 for RS60. He mixes them and sells them at 25 for RS60. What is gain or loss percent?
(a) Gain of 4%
(b) Loss of 4%
(c) Neither gain nor loss
(d) Loss of 5%

Q.3) A man bought oranges at the rate of 8 for RS.34 and sold them at the rate of 12 for RS.57. How many oranges should be sold to earn a net profit of 45?
(a) 90
(b) 100
(c) 135
(d) 150

Q.4) By selling 14 watches of equal cost price at the rate of RS. 450 each, there is a profit equal to the cost price of 4 watches. The cost price of a watch is
(a) 350
(b) 360
(c) 375
(d) 400

Q.5) A radio is sold at a profit of 20%. Had it been sold for Rs. 60 more the profit would have been 30%. The cost price of the radio is
(a) Rs. 500
(b) Rs. 600
(c) Rs. 550
(d) Rs. 620

Q.6) A dealer sold a bicycle at a profit of 10%. Had he bought the bicycle at 10% less price and sold it at a price Rs. 60 more, he would have gained 25%. The cost price of the bicycle was
(a) Rs. 2400
(b) Rs. 2600
(c) Rs. 2000
(d) Rs. 2200

Q.7) Arun buys one kilogram of apples for Rs. 120 and sells it to Swati gaining 25%. Swati sells it to Divya who again sells it for Rs. 198, making a profit of 10%. What is the profit percentage made by Swati?
(a) 25%
(b) 20%
(c) 16.67%
(d) 15%

Q.8) A dealer sold an article at 6% loss. Had he sold it for Rs. 64 more, he would have made a profit of 10%. Then the cost of the article is
(a) Rs. 400
(b) Rs. 200
(c) Rs. 164
(d) Rs. 464

TYPE 5

Q.1) The ratio of cost price and selling price is 5: 4, the loss per cent is:
(a) 20%
(b) 25%
(c) 40%
(d) 50%

Q.2) The ratio of the C.P. and S.P. of an article is 20 : 21. What is the gain per cent?
(a) 5%
(b) 5.5%
(c) 6%
(d) 6.25%

Q.3) A milkman makes 20% profit by selling milk mixed with water at RS.9 per litre. If the cost price of 1 litre pure milk is RS.10, then the ratio of milk and water in the said mixture is
(a) 3 : 1
(b) 4 : 1
(c) 3 : 2
(d) 4 : 3

Q.4) The prices of a refrigerator and a television set are in the ratio 5 : 3. If the refrigerator costs RS.5500 more than the television set, then the price of the refrigerator is:
(a) 27500
(b) 8250
(c) 13750
(d) 16500

Q.5) Costs of two watches were in the ratio of 16 : 23. The cost of first watch increases by 10% and that of second by Rs. 477. Now the costs of two watches are in a ratio of 11 : 20. The price of the second watch (in Rs.) in the beginning was
(a) 932
(b) 1219
(c) 1696
(d) 848

Q.6) By selling an article at $\frac{2}{3}$ of the marked price, there is a loss of 10%. The profit percent, when the article is sold at the marked price, is
(a) 20%
(b) 30%
(c) 35%
(d) 40%

Q.7) A publisher printed 2000 copies of a book at a cost of RS.70,000. He distributes 400 copies free as specimen copies. He gave 30% discount on printed price and the printed price of each book is RS.75. What is his gain or loss percentage?
(a) 20% gain
(b) 20% loss
(c) 10% loss
(d) 10% gain

Q.8) Pratap buys a watch at $\frac{4}{5}$th of its marked price and sells it for 17% more than its marked price. His profit based on its cost is
(a) Rs. 20
(b) Rs. 25
(c) Rs. 37
(d) Rs. 17

TYPE 6

Q.1) Profit after selling a commodity for RS524 is the same as loss after selling it for RS452. The cost price of the commodity is
(a) 480
(b) 500
(c) 488
(d) 485

Q.2) A clock was sold for 144. If the percentage of profit was numerically equal to the cost price, the cost of the clock was
(a) 72
(b) 80
(c) 90
(d) 100

Q.3) A house and a shop were sold for RS.1 lakh each. In this transaction, the house sale resulted into 20% loss whereas the shop sale into 20% profit. The entire transaction resulted in :
(a) no loss no gain
(b) gain of RS $\frac{1}{24} lakh$
(c) loss of RS $\frac{1}{12} lakh$
(d) loss of RS $\frac{1}{18} lakh$

Q.4) A shopkeeper sells two T.V. sets at the same price. There is a gain of 20% on one TV and a loss of 20% on the other. State which of the following statement is correct:
(a) The shopkeeper makes no net gain or profit
(b) The shopkeeper loses by 2%
(c) The shopkeeper gains by 4%
(d) The shopkeeper loses by 4%

Q.5) A man sells two pipes at RS.12 each. He gains 20% on one and loses 20% on the other. In the whole transaction, there is
(a) neither loss nor gain
(b) profit of 1
(c) loss of 1
(d) Profit of 2

Q. 6) Kewal sells two tape recorders at the same price. On one, he gains 10% and on the other he loses 10%. The total gain or loss in the transaction is
(a) 1% gain
(b) 1% loss
(c) No loss or gain
(d) 2% loss

Q.7) A television and a refrigerator were sold for RS.12,000 each. If the television was sold at a loss of 20% of the cost and the refrigerator at a gain of 20% of the cost, the entire transaction resulted in
(a) No loss or gain
(b) Loss of 1,000
(c) Gain of 1,000
(d) Loss of 1,200

Q.8) The total cost price of two watches is RS.840. One is sold at a profit of 16 per cent and the other at a loss of 12 per cent. There is no loss or gain in the whole transaction. The cost price of the watch on which the shopkeeper gains, is
(a) 360
(b) 370
(c) 380
(d) 390

Q.9) A person bought two articles A and B for 5,000. He sold A at 20% profit and B at 10% loss. He thus gained 2% on his outlay. The cost price of A was
(a) 3,000
(b) 2,500
(c) 2,000
(d) 3,500

Q.10) *A*, *B* and *C* invest 15000, 20000 and 25000 respectively in a business. The profit earned is 1200. Find the share of A in the profit.
(a) 300
(b) 400
(c) 500
(d) 600

Q.11) *A*, *B* and *C* enter into a partnership. Their contributions are Rs. 30 lakhs, Rs. 20 lakhs, and Rs. 10 lakhs respectively. *A* and *B* are working partners while *C* is a sleeping partner. *A* and *B* get 10% and 15% of gross profit respectively as salary for managing the business. If at the year end *C* receives 3.75 lakhs, as profit, find the share of *A*.
(a) 16 Lakhs
(b) 12 Lakhs
(c) 18 Lakhs
(d) 14.25 Lakhs

Q.12) Bimalbabu sells two cars each of Rs. 99,000. He makes a profit of 10% on the first car, but incurs a loss of 10% on the second. What will be his percentage of profit or loss on the whole transaction?
(a) 1% profit
(b) 1% loss
(c) 4% profit
(d) 4% loss

DISCOUNT

RULE 1 : If Marked Price = (MP)
Selling Price = (SP)
Then, Discount = MP – SP

And

DISCOUNT % = $\frac{Discount}{Marked\ Price} * 100$

Note: Any kind of Discount is calculated only on marked price and not on selling price or cost price.

RULE 2 : (Special Case) : When two successive discounts are given, then overall discount is
= $\left(D1 + D2 - \frac{D1D2}{100} \right)$

Way to success: Note that all calculations of % discount are done on 'Marked' price and not on C.P./S.P. use formulae for speedy answers.

TYPE 1

Q.1) Applied to a bill for 1,00,000 the difference between a discount of 40% and two successive discounts of 36% and 4% is :
(a) Nil
(b) 1,440
(c) 2,500
(d) 4,000

Q.2) Successive discounts of 10% and 30% are equivalent to a single discount of:
(a) 40%
(b) 35%
(c) 38%
(d) 37%

Q.3) The marked price of a watch was RS.720/-. A man bought the same for RS.550.80, after getting two successive discounts, the first at 10%. What was the second discount rate?
(a) 12%
(b) 14%
(c) 15%
(d) 18%

Q.4) The marked price of a watch is 1000. A retailer buys it at 810 after getting two successive discounts of 10% and another rate which is illegible. What is the second discount rate?
(a) 15%
(b) 10%
(c) 8%
(d) 6.5%

Q.5) Successive discounts of 10% and 20% are equivalent to a single discount of:
(a) 30%
(b) 15%
(c) 28%
(d) 12%

Q.6) The equivalent single discount for two successive discounts of 15% and 10% is
(a) 25%
(b) 20%
(c) 23.5%
(d) 20.5%

Q.7) The marked price of an article is 500. It is sold at successive discounts of 20% and 10%. The selling price of the article (in rupees) is:
(a) 350
(b) 375
(c) 360
(d) 400

Q.8) An item is marked for RS.240 for sale. If two successive discounts of 10% and 5% are allowed on the sale price, the selling price of the article will be
(a) 205.20
(b) 204
(c) 34.80
(d) 36

Q.9) The price of an article is raised by 30% and then two successive discounts of 10% each are allowed. Ultimately the price of the article is
(a) increased by 10%
(b) increased by 5.3%
(c) decreased by 3%
(d) decreased by 5.3%

Q. 10) A single discount equivalent to the successive discounts of 10%, 20% and 25% is
(a) 55%
(b) 45%
(c) 46%
(d) 60%

Q.11) The marked price of a watch is RS.800. A shopkeeper gives two successive discounts and sells the watch at RS.612. If the first discount is 10%, the second discount is:
(a) 10%
(b) 12%
(c) 15%
(d) 20%

Q.12) A dealer buys a car listed at 200000 at successive discounts of 5% and 10%. If he sells the car for 179550, then his profit is
(a) 10%
(b) 9%
(c) 5%
(d) 4%

Q.13) The difference between a discount of 30% on RS.2,000 and two successive discounts of 25% and 5% on the same amount is
(a) 30
(b) 35
(c) 25
(d) 40

Q.14) Successive discounts of p% and q% on the catalogue price of an article is equivalent to a single discount of:

(a). $(x - y - \frac{XY}{100})\%$

(b) $(P - Q - \frac{PQ}{100})\%$

(c) $(P + Q - \frac{PQ}{100})\%$

(d) $(P + Q + \frac{PQ}{100})\%$

Q.15) The marked price of a table is RS.800. A retailer bought it after two successive discounts of 10% and 15%. He spent RS.13 on transportation and sold it for RS.875. His profit was

(a) 40%
(b) 37%
(c) 28%
(d) 25%

Q.16) A dinner set is quoted for Rs. RS.1500. A customer pays Rs. 1173 for it. If the customer got a series of two discounts and the rate of first discount is 15% then the rate of second discount was

(a) 15%
(b) 7%
(c) 9%
(d) 8%

Q.17) A trader marks the sale price 25% more on cost price and gives a 10% discount at the time of selling. The gain per cent is

(a) 12.5%
(b) $12\frac{1}{3}\%$
(c) 11.5%
(d) 12%

TYPE 2

Q.1) A tradesman marks his goods 10% above his cost price. If he allows his customers 10% discount on the marked price, how much profit or loss does he make, if any?

(a) 1% gain
(b) 1%loss
(c) 5% gain
(d) No gain, no loss

Q.2) A trademan marks his goods at 20% above the cost price. He allows his customers a discount of 8% on marked price. Find out his profit per cent.

(a) 12%
(b) 10.4%
(c) 8.6%
(d) 8.2%

Q.3) A shopkeeper marks his goods 20% above cost price, but allows 30% discount for cash. His net loss is:

(a) 8%
(b) 10%
(c) 16%
(d) 20%

Q.4) In a shop, shirts are usually sold at 40% above the cost price. During a sale, the shopkeeper offers a discount of 10% off the usual selling price. If he manages to sell 72 shirts for RS.13,608, then his cost price per shirt, (in RS) is

(a) 210
(b) 150
(c) 149
(d) 125

Q.5) A merchant purchases a wrist watch for RS.450 and fixes its list price in such a way that after allowing a discount of 10%, he earns a profit of 20%. Find the list price of the watch.

(a) 480
(b) 450
(c) 600
(d) 540

Q.6) Anand marks up the price of an article by 50% and then allows a discount of 20% and sells it to Balaji. Balaji sells it for RS.20 more than what he purchased for, this S.P is 30% more than the original C.P of the article. Then Balaji's profit % is

(a) 7.5%
(b) 6.66%
(c) 8.33%
(d) 9%

Q.7) A shopkeeper allows a discount of 10% on the marked price of an item but charges a sales tax of 8% on the discounted price. If the customer pays RS.3,402 as the price including the sales tax, then the marked price is

(a) 3,400
(b) 3,500
(c) 3,600
(d) 3,800

Q.8) A cycle dealer offers a discount of 10% and still makes a profit of 26%. What does he pay for a cycle whose marked price is Rs. 840?

(a) 600
(b) 650

(c) 700
(d) 750

Q.9) Ram bought a T.V. with 20% discount on the labelled price. Had he bought it with 30% discount he would have saved RS.800. The value of the T.V. set that he bought is
(a) 5,000
(b) 8,000
(c) 9,000
(d) 10,000

Q.10) If a person marks a product 25% above the cost price but allows 10% discount, then the percentage of profit is
(a) 35 %
(b) 15 %
(c) 17.5 %
(d) 12.5 %

Q.11) A tradesman marks his goods at 20% above the cost price. He allows his customers a discount of 8% on the marked price. Then his profit per cent is
(a) 10.4%
(b) 11%
(c) 12.2%
(d) 9.7%

Q.12) 20% profit is made when a discount of 20% is given on the marked price. When the discount is 30% profit will be
(a) 4%
(b) 5%
(c) 6%
(d) 7.5%

Q.13) If a shopkeeper wants to give 20% discount on a toy, he has to sell it for Rs. 300. If he sells it at Rs. 405, then his gain percent is
(a) 5%
(b) 4%
(c) 8%
(d) 6%

Q.14) A merchant marked the price of an article by increasing its production cost by 40%. Now he allows 20% discount and gets a profit of Rs. 48 after selling it. The production cost is
(a) Rs. 320
(b) Rs. 360
(c) Rs. 400
(d) Rs. 440

Q.15) A watch dealer pays 10% customs duty on a watch which costs Rs. 500 abroad. He desires to make a profit of 20% after giving a discount of 25% to the buyer. The marked price should be
(a) Rs. 950
(b) Rs. 800
(c) Rs. 880
(d) Rs. 660

Q.16) A book seller allowed 10% discount on printed price. He gets 30% commission from publisher. His profit in per cent will be
(a) 20
(b) $28\frac{4}{7}$
(c) 25
(d) $26\frac{3}{7}$

Q.17) A dealer is selling an article at a discount of 5% on the marked price. If the marked price is 12% above the cost price and the article was sold for Rs. 532, then the cost price is (in Rs.)
(a) 500
(b) 525
(c) 505
(d) 520

Q.18) A shopkeeper increases the price of an object by 40% and then sells it at 25% discount on the Marked price. If the selling price of such an object be Rs. 2100, its cost price for the shopkeeper was
(a) Rs. 3000
(b) Rs. 1500
(c) Rs. 1750
(d) Rs. 2000

TYPE 3

Q.1) A dealer offers a discount of 10% on the marked price of an article and still makes a profit of 20%. If its marked price is 800, then the cost price of the article is:
(a) 900
(b) 800
(c) 700
(d) 600

Q.2) The marked price of an article is RS200. A discount of 12.5% is allowed on the marked price and a profit of 25% is made. The cost price of the article is:
(a) 200
(b) 175
(c) 120

(d) 140

Q.3) By giving a discount of 10% on the marked price of RS.1100 of a cycle, a dealer gains 10%. The cost price of the cycle is:
(a) 1100
(b) 900
(c) 1089
(d) 891

Q.4) A shopkeeper offers 10% discount on the marked price of his articles and still makes a profit of 20%. What is the actual cost of the article marked RS.500 for him?
(a) 440
(b) 425
(c) 400
(d) 375

Q.5) A shopkeeper earns a profit of 12% on selling a book at 10% discount on the printed price. The ratio of the cost price and the printed price of the book is
(a) 45 : 56
(b) 45 : 51
(c) 47 : 56
(d) 47 : 51

Q.6) In order to maintain the price line a trader allows a discount of 10% on the marked price of an article. However, he still makes a profit of 17% on the cost price. Had he sold the article at the marked price, he would have earned a profit per cent of
(a) 30%
(b) 32%
(c) 33%
(d) 35%

Q.7) A trader allows a trade discount of 20% and a cash discount of $6\frac{1}{4}$ % on the marked price of the goods and gets a net gain of 20% of the cost. By how much above the cost should the goods be marked for the sale?
(a) 40%
(b) 50%
(c) 60%
(d) 70%

Q.8) A person purchased a saree for RS.7710 after availing a net discount of RS.1285. The percentage of discount, the saree shop offers, is
(a) 14 1/7%
(b) 14 2/7%
(c) 14 3/7 %
(d) 14 4/7%

Q.9) A store offers a variety of discounts that range between 20% and 25% inclusive. If a book is discounted to a price of RS.270, then its greatest possible original price was
(a) 345.5
(b) 324
(c) 360
(d) 337.5

Q.10) A shopkeeper earns a profit of 12% on selling a book at 10% discount on the printed price. The ratio of the cost price to the printed price of the book is
(a) 45 : 56
(b) 50 : 61
(c) 99 : 125
(d) None of these

Q.11) A dealer purchased an article for Rs. 900 and fixes the list price in such a way that he gains 20% after allowing 10% discount, then the list price is:
(a) Rs. 1180
(b) Rs.1080
(c) Rs. 1200
(d) Rs.1100

TYPE 4

Q.1) A discount of 2½% is given to the customer on the marked price of an article. A man bought the article for 39. The marked price of the article is:
(a) 42
(b) 36.5
(c) 40
(d) 41.5

Q.2) The printed price of an article is RS.900 but the retailer gets a discount of 40%. He sells the article for 900. Retailer's gain per cent is:
(a) 40%
(b) 60%
(c) 66 2/3%
(d) 68 1/3%

Q.3) A retailer buys 40 pens at the marked price of 36 pens from a wholesaler. If he sells these pens giving a discount of 1%, what is the profit percent?
(a) 9%
(b) 10%
(c) 10 1/9%
(d) 11%

Q.4) A sells a scooter priced Rs. 36,000. He gives a discount of 8% on the first Rs. 20,000 and 5% on the next RS10,000. How much discount can he offered on the remaining Rs. 6,000 if he is to get as much as when 7% discount is allowed on the total?
(a) 5%
(b) 6%
(c) 7%
(d) 8%

Q.5) While selling a watch, a shopkeeper gives a discount of 5%. If he gives a discount of 6%, he earns RS15 less as profit. What is the marked price of the watch?
(a) 1,250
(b) 1,400
(c) 1,500
(d) 750

Q.6) A fan in a shop is offered at a discount of 10%. It is sold during clearance sale at 6% discount over the already discounted price at 846. The original marked price of the fan is
(a) 900
(b) 946
(c) 850
(d) 896

Q.7) Articles are marked at a price which gives a profit of 25%. After allowing a certain discount the profit reduces to 12.5% . The discount percent is
(a) 11.1%
(b) 10%
(c) 12.5%
(d) 12%

Q.8) A photographer allows a discount of 10% on the advertised price of a camera. The price (in Rs.) that must be marked on the camera, which cost him Rs. 600, to make a profit of 20% would be
(a) 650
(b) 800
(c) 700
(d) 850

Q.9) A dealer allows a discount of 15%. A customer pays an amount of Rs. 318.75 for an article. At what price is the article listed?
(a) Rs. 366.50
(b) Rs. 375.00
(c) Rs. 350.00
(d) Rs. 431.25

Q.10) A dealer marks a washing machine for Rs. 7500, and allows a discount of 6% on it. Find its selling price.
(a) Rs. 6850
(b) Rs. 7050
(c) Rs. 7250
(d) Rs. 6950

Q.11) A shopkeeper gives two successive discounts of 7% each on the marked price of Rs. 20,000 of an article. The selling price of the article is
(a) Rs. 12,978
(b) Rs. 19,278
(c) Rs. 18,927
(d) Rs. 17,298

SIMPLE INTEREST

TYPE 1

Q1. What sum of money must be given as simple interest for six months at 4% per annum in order to earn 150 interest?
(a) 5000
(b) 7500
(c) 10000
(d) 15000

Q2. Rs. 1400 amounts to Rs. 1484 in 2 years at a certain rate. If interest rate is increased by 2%, then what will be the interest?
(a) 150
(b) 160
(c) 165
(d) 140

Q.3) A sum fetched a simple interest of Rs. 5264 at a rate of 7 percent per year in 8 years. What is the sum?
(a) Rs. 9400
(b) Rs. 9600
(c) Rs. 10600
(d) Rs. 8400

Q.4) What is the maturity value of Rs.25000 at the end of 2 years at 9.25% simple interest?
(a) Rs. 29625
(b) Rs. 30225
(c) Rs. 29250
(d) Rs. 28000

Q.5) The amount Rs. 2100 became Rs. 2352 in 2 years at a certain simple interest. If the rate has decreased by 1%, what will be the new interest?
(a) Rs. 210
(b) Rs. 252
(c) Rs. 220
(d) Rs. 242

Q.6) Seema invested a certain sum of money at the rate of interest 8% per annum for x years. If she got 2/5 of the principal as a simple interest, find the value of x?
(a) 8 years
(b) 2 years
(c) 5 years
(d) 6 years

Q.7) The simple interest on a certain sum of money for 3 years at a rate of $9\frac{1}{11}$ % per annum is Rs. 1800 less than the principal. Find the value of the principal.
(a) Rs. 2486
(b) Rs. 2475
(c) Rs. 2871
(d) Rs. 2376

TYPE 2

Q.1) The difference between simple interest on a certain sum at 7% per annum for 6 years and 10% per annum for 3 years is Rs. 540. The sum is
(a) Rs. 5000
(b) Rs. 7500
(c) Rs. 6000
(d) Rs. 4500

Q.2) The difference in simple interest on a certain sum at 7% per annum for 5 years and 6% per annum for 4 years is Rs. 550. Find the sum.
(a) Rs. 5000
(b) Rs. 7500
(c) Rs. 6000
(d) Rs. 4500

Q.3) A sum lent out at simple interest amounts to Rs. 6076 in 1 year and Rs. 7504 in 3 years. The sum and the rate of interest (approx) p.a are respectively:
(a) Rs. 5,600 and 9%
(b) Rs. 5,400 and 9%
(c) Rs. 5,400 and 10%
(d) Rs. 5,362 and 13.32%

Q.4) Karim took some amount of money from Vishal at the rate of 10% per annum at simple interest for 3 years and lent it to Vikash at the rate of 15% per annum at simple interest for 3 years. If the total profit earned by Karim is Rs.3750, then what is the amount taken by Karim from Vishal?
(a) Rs. 25000
(b) Rs. 15000
(c) Rs. 24000
(d) Rs. 13500

Q.5) After 6 years, a sum invested at simple interest at the rate of r percent becomes twice of itself. What is the value of 'r'?
(a) (25/6)%
(b) (50/3)%
(c) (25/2)%
(d) (50/7)%

Q.6) Rs. 480 is invested at simple interest. It becomes Rs. 520 after 20 months. What is the interest rate per annum?
(a) 4%
(b) 8%
(c) 6%
(d) 5%

Q.7) A sum is invested at a simple interest. If the rate of interest is 20% per annum, then in how much time will it become double of itself?
(a) 5 years
(b) 10 years
(c) 4 years
(d) 8 years

Q.8) A sum amounts to Rs. 56000 at the rate of 15% per annum simple interest for 4 years. What will be the interest on same sum at the rate of 12% per annum simple interest in triple the earlier time?
(a) 40500
(b) 32300
(c) 50400
(d) 45200

Q.9) A man deposited Rs. 12500 in two bank accounts each at simple interest. If the difference between the interests earned from two accounts after 5 years is Rs. 156.25, then find the difference between the rates of interest?
(a) 0.5
(b) 0.30
(c) 0.35
(d) 0.25

Q.10) Two equal amounts were borrowed at 5% and 4% simple interest. The total interest after 4 years amounted to Rs. 405. What was the total amount borrowed?
(a) Rs. 1075
(b) Rs. 1100
(c) Rs. 1125
(d) Rs. 1150

Q.11) Simple interest is 36% less than the sum. What is the rate of interest if time and rate of interest is equal?
(a) 5%
(b) 8%
(c) 4%
(d) 10%

Q.12) Simple interest obtained on a sum of Rs. 3000 in 2 years is Rs. 120 more than the simple interest obtained on a sum of Rs. 2500 at same rate and time duration. Find the rate of interest.
(a) 15%
(b) 12%
(c) 8%
(d) 10%

Q.13) Simple interest for three years for a certain sum at the rate of 15% is ₹ 9000. If the rate of interest becomes 30%, then what will be the simple interest for two years?
(a) ₹27000
(b) ₹4500
(c) ₹12000
(d) ₹9000

Q.14) Rs.1500 is invested in two parts such that if one part is invested at 6% and the other at 5%, the total interest in one year from both investments is Rs. 85. How much is invested at 5%?
(a) Rs. 450
(b) Rs. 550
(c) Rs. 500
(d) Rs. 400

TYPE 3

Q.1) A borrows a sum of Rs. 2,000 from his friend B on 31 December 2011 on the condition that he will return the same after one year with simple interest at 8% per annum. However, A gets into a position of returning the money on 1 July 2012. How much amount he has to return to B?
(a) Rs. 2,088
(b) Rs. 2,080
(c) Rs. 2,070
(d) Rs. 2,200

Q.2) A person deposited Rs. 500 for 2 years, Rs. 600 for 5 years and Rs. 1000 for 6 years all at the same rate of simple interest. If he received the total simple

interest of Rs. 1000, then what is the rate of interest per annum?
(a) 15%
(b) 20%
(c) 5%
(d) 10%

Q.3) The simple interest for 9 years on a principal is $\frac{3}{5}$ of the principal. What is the rate of interest per annum?
(a) 6%
(b) 20/3%
(c) $5\frac{2}{3}$%
(d) 4%

Q.4) The rate of simple interest on a sum of money is 5% p.a. for the first 4 years, 8% p.a. for the next 3 years and 10% p.a. for the period beyond 7 years. If the simple interest accumulated by the sum over a period of 10 years is Rs. 1,850, then the sum is:
(a) Rs. 1,650
(b) Rs. 2,750
(c) Rs. 2,500
(d) Rs. 1,500

Q.5) On a certain sum, simple interest for 5/2 years at an annual rate of 12% is Rs. 50 less than the interest on the same sum for 7/2 years at an annual rate of 10%. Find the sum.
(a) Rs. 1500
(b) Rs. 1000
(c) Rs. 1200
(d) Rs. 2000

Q.6) A certain sum is invested in such a way that 50% of sum invested at 10%, 50% percent of remaining at 20% and remaining invested at 40%. If the total SI in a year is 18000 then find the total sum in Rs..
(a) 90000
(b) 70000
(c) 65000
(d) 100000

Q.7) Two equal amounts were borrowed at 5% and 4% simple interest. The total interest after 4 years amounted to Rs. 405. What was the total amount borrowed?
(a) Rs. 1075
(b) Rs. 1100
(c) Rs. 1125
(d) Rs. 1150

Q.8) The amount of Rs. 7,200 is invested at the normal interest rate of 11% per annum, if half of the amount received after 5 years is invested in the stock market then find the savings (in rupees).
(a) 5,580
(b) 5,570
(c) 5,565
(d) 5,575

TYPE 4

Q.1) A person borrows certain amount of money at the rate of 2.5% per month. If he pays Rs. 13110 after 6 months to clear his dues then find the amount of interest paid by the person
(a) Rs. 1840
(b) Rs. 1690
(c) Rs. 1710
(d) Rs. 1660

Q.2) Rs. x invested at 9% simple interest per annum for 5 years yields the same interest as that on Rs. y invested at 6.25% simple interest per annum for 8 years. Find x : y.
(a) 16 : 15
(b) 10 : 9
(c) 45 : 50
(d) 5 : 8

Q.3) A sum of money at simple interest will become 4 times of itself at 5% per annum S.I. in a certain time. At what rate % per annum; it will become 7 times of itself in the same time.
(a) 20%
(b) 45%
(c) 10%
(d) 30%

Q.4) A sum of Rs. 2700 divided in two part in the ratio 5 : 4. If the first part gives for 3.5 years at 1.5% per annum for simple interest and the second part gives for 2.5 years at 1.25% per annum for simple interest. What is the sum of simple interest of both parts?
(a) 121
(b) 89
(c) 59
(d) 116.25

Q.5) A girl borrowed a sum of Rs. 17200 at a rate of 12% simple interest per annum for 1 year and 73 days. How much amount did she pay to clear her debt?

(a) Rs. 24760.8
(b) Rs. 29676.8
(c) Rs. 19676.8
(d) Rs. 2476.8

Q.6) The simple interest on Rs. x for m years at a rate of r% is equal to the simple interest on Rs. y for n years at the rate of s%, then find x/y.
(a) mr/ns
(b) ms/nr
(c) nr/ms
(d) ns/mr

Q.7) A certain sum is lent at x % p.a simple interests for x/3 years. The simple interest on the sum is equal to one-third of the sum. The value of x is:
(a) 6
(b) 12
(c) 9
(d) 10

Q.8) The simple interest on some amount of money for 2 years is Rs.400. If 'r' is 4% more, then the Simple Interest will be Rs.400 more. What is the original amount of money?
(a) Rs. 4000
(b) Rs. 12000
(c) Rs. 10000
(d) Rs. 5000

Q.9) If a certain sum becomes seven times of itself in 9 years at a certain rate of interest at SI. In how many years will it become 15 times of itself?
(a) 17 years
(b) 25 years
(c) 21 years
(d) 15 years

Q.10) Simple interest on a sum of money is 16/81 of the principal and the number of years is equal to the rate% p.a. Find rate%.
(a) 20√2%
(b) 20/9%
(c) 40/3%
(d) 40/9%

Q.11) A sum becomes Rs. 10650 in 5 years. and Rs. 11076 in 6 years. at simple interest. What is the sum?
(a) Rs. 8946
(b) Rs. 8740
(c) Rs. 8520
(d) Rs. 8800

Q.12) A moneylender gives a loan of 15,000/- to three farmers in the ratio 3 : 5 : 7. They pay a yearly interest of 10%, 20% and 28 $\frac{4}{7}$ % to the moneylender. Find the sum of interest paid by the farmers at the end of the year?
(a) 4200/-
(b) 3500/-
(c) 3300/-
(d) 2800/-

Q.13) A man invests half his capital at the rate of 10% per annum, one third at 9% and the rest at 12% per annum. The average rate of interest per annum, which he gets, is
(a) 9%
(b) 10%
(c) 10.5%
(d) 12%

Q.14) A sum of 1000 is lent out partly at 8% and the remaining at 10% per annum. If the yearly income on the average is 9.2%, the two parts respectively are
(a) 400, 600
(b) 450, 550
(c) 500, 500
(d) 550, 450

Q.15) If the ratio of principal and the simple interest for 5 years is 10 : 3, then the rate of interest is :
(a) 5%
(b) 6%
(c) 8%
(d) 3%

COMPOUND INTEREST

TYPE 1

Q.1) What will be the compound interest (nearest to integer) on a sum of Rs. 25,000 for 2 years at 12% p.a., if the interest is compounded 8 monthly?
(a) Rs. 6,394
(b) Rs. 6,493
(c) Rs. 6,439
(d) Rs. 6,349

Q.2) What is the compound interest on a sum of Rs. 8,100 for $1\frac{1}{4}$ years at 8% per annum, if the interest is compounded 5-monthly? (Nearest to Rs.1)
(a) Rs. 873
(b) Rs. 824
(c) Rs. 842
(d) Rs. 837.3

Q.3) If Rs. 10000 amounts to Rs. 12100 in a year when compounded half yearly. Find the compound interest at the same rate for 2 years calculated annually on the same amount.
(a) Rs. 4400
(b) Rs. 1800
(c) Rs. 1750
(d) Rs. 1500

Q.4) A certain sum invested on compound interest grows to Rs. 8,000 and Rs. 27,000 in three and six years, respectively when the interest is compounded annually, what is the percentage rate of interest?
(a) 10%
(b) 0.5%
(c) 50%
(d) 25%

Q.5) The compound interest on a certain sum of money at 21% for 2 years is Rs. 9,282. Its simple interest (in 2 years) at the same rate and for the same period is:
(a) 8,750
(b) 8,500
(c) 8,000
(d) 8,400

Q.6) Rs. 6500 are invested in a scheme of compound interest. If the rate of interest is 8% per annum, then what is the interest earned (in Rs) in 2 years?
(a) Rs. 1081.6
(b) Rs. 1581.6
(c) Rs. 1684.2
(d) Rs. 1276.8

Q.7) The compound interest on a sum for 4th year is ₹ 6000 and compound interest for 5th year is ₹ 6750 (interest is compounded annually). What is the rate of interest?
(a) 25%
(b) 20%
(c) 12.5%
(d) 15%

TYPE 2

Q.1) $(CI - SI)_{2\text{ year}}$ = Rs. 450; R = 15%
Find Principal?
(a) 10000
(b) 15000
(c) 20000
(d) 25000

Q.2) A sum of Rs. 18,000 is lent at 10% p.a compound interest, compounded annually, what is the difference between the compound interest for 3rd year and 4th year?
(a) Rs. 217.80
(b) Rs. 220.60
(c) Rs. 215.40
(d) Rs. 221.80

Q.3) A sum of Rs. 1000 is invested on compound interest (compounding annually) for three years. If the rate of interest is 10% per annum for the first two years and 50% per annum for the third year, then what will be the interest?
(a) Rs. 756
(b) Rs. 655
(c) Rs. 612
(d) Rs. 815

Q.4) A certain sum invested on compound interest (compounded annually) grows to Rs. 5040 in three years. If the rate of interest is 20% for the first year, 40% for the second and 50% for the third year, then what is the sum?
(a) Rs. 1800
(b) Rs. 2000

(c) Rs. 2566
(d) Rs. 1210

Q.5) A sum of money is invested at compound interest, which is compounded annually. The sum grows to Rs. 1000 after three years, and Rs. 1100 after four years. What is rate of interest per annum?
(a) 10%
(b) 15%
(c) 12.5%
(d) 20%

Q.6) A man borrowed some money and agreed to pay-off by paying Rs 3150 at the end of the 1st year and Rs 4410 at the end of the 2nd year. If the rate of compound interest is 5% per annum, then the sum is
(a) Rs 5000
(b) Rs 6500
(c) Rs 7000
(d) Rs 9200

TYPE 3

Q.1) A sum borrowed under compound interest double itself in 6 years. When will it become 32 times itself at the same rate of interest?
(a) 34 years
(b) 28 years
(c) 32 years
(d) 30 years

Q.2) If a sum of money on compound interest becomes three times in 4 years, then at the same interest rate, the sum will become 27 times in:
(a) 15 years
(b) 12 years
(c) 10 years
(d) 16 years

Q.3) A sum of Rs. 18,000 is lent at 10% p.a compound interest, compounded annually, what is the difference between the compound interest for 3rd year and 4th year?
(a) Rs. 217.80
(b) Rs. 220.60
(c) Rs. 215.40
(d) Rs. 221.80

Q.4) A sum of money becomes 3 times in 10 years at the rate of compound interest (compounded annually). In how many years will it become 81 times?
(a) 40 years
(b) 30 years
(c) 35 years
(d) 50 years

Q.5) Find the sum of money invested by a man in a scheme which offers Compound Interest at 8% rate of interest per annum if Compound Interest for 2 years is Rs. 6656
(a) Rs. 55,000
(b) RS. 45,000
(c) Rs. 50,000
(d) Rs. 40,000

Q.6) A sum of money is invested at 20% compound interest (compounded annually). It would fetch Rs. 723 more in two years if interest is compounded half-yearly. The sum is
(a) Rs. 15,000
(b) Rs. 30,000
(c) Rs. 20,000
(d) Rs. 7,500

Q.7) Amir borrowed a sum of Rs. 25,000 on simple interest. Bhola borrowed the same amount on compound interest (interest compounded yearly). At the end of 2 years, Bhola had to pay Rs. 160 more interest than Amir. The rate of interest charged per annum is:
(a) 8%
(b) $3\frac{1}{8}\%$
(c) 16/25%
(d) 8/25%

Q.8) What would be the compound interest earned on Rs. 20000 in 2 years if the rate of interest for the first year is 5% per annum and that for the second year is 8% per annum?
(a) Rs. 2680
(b) Rs. 2820
(c) Rs. 2640
(d) Rs. 2440

Q.9) 60000 divided into two parts such that the 1st part is invested at 10% p.a and the 2nd part is invested at 12% p.a. The total CI in two years is 13488. Find the 1st and 2nd part?
(a) 20000, 40000
(b) 40000, 20000
(c) 25000, 35000
(d) 30000, 30000

Q.10) In a bank, Deepa deposits a sum of Rs. 6250, which amounts to Rs. 7840 in two years, compounded annually. The rate of interest is:
(a) 10%
(b) 12%
(c) 13%
(d) 11%

Q.11) What will be the amount if a sum of Rs 25,000 is placed at CI for 3 years while rate of interest for the first, second, and third years is 4%, 8%, and 10%, respectively?
(a) Rs. 30888
(b) Rs. 32784
(c) Rs. 35215
(d) Rs. 31688

Q.12) The sum of money doubles at compound interest in 6 years. In how many years will it become 16 times?
(a) 16 years
(b) 24 years
(c) 48 years
(d) 96 years

TYPE 4

Q.1) Find the compound interest generated by a sum of Rs. 36000 at the rate of 16.67% interest compounded annually in 1 year 73 days.
(a) Rs. 7500
(b) Rs. 8400
(c) Rs. 7000
(d) Rs. 7400

Q.2) What is the total compound interest on Rs. 45000 for 3 years when the sum is divided into a ratio of 4 : 5 and rate of interest on a small sum is 10% and 20% on the large sum? (Compounded annually)
(a) Rs. 20010
(b) Rs. 24820
(c) Rs. 25630
(d) Rs. 26400

Q.3) A person borrowed a certain sum at 10% p.a. for three years, interest being compounded annually. At the end of two years, he repaid a sum of Rs. 6,634 and at the end of the third year, he cleared off the debt by paying Rs.13,200. What was the sum borrowed by him?
(a) Rs. 16,400
(b) Rs. 16,500
(c) Rs. 15,400
(d) Rs. 15,600

Q.4) Find the CI on Rs. 1200 from 12th August 2017 to 5th Jan 2018 at 15% per annum rate of interest, compounded annually.
(a) 74
(b) 73
(c) 71
(d) 72

Q.5) A sum of Rs. 8,000 invested at 10% p.a. amounts to Rs. 9,261 in a certain time, interest compounded half–yearly. What will be the compound interest (in Rs) on the same sum for the same time at double the earlier rate of interest, when interest is compounded annually?
(a) Rs. 2,500
(b) Rs. 2,480
(c) Rs. 2,560
(d) Rs. 2,520

Q.6) What is the compound interest on Rs. 48,000 for 2 years at 20% p.a., if interest is compounded annually?
(a) Rs. 69,120
(b) Rs. 21,120
(c) Rs. 76,800
(d) Rs. 72,000

TYPE 5

Q.1) The difference between the simple interest and compound interest for two years on Rs. 15000 at a certain rate of interest is Rs. 96. Find the rate of interest.
(a) 4%
(b) 8%
(c) 9%
(d) 16%

Q.2) Find the difference between compound interest and simple interest for 2 years on a sum of Rs. 12000 at a rate of 12% per annum.
(a) Rs. 172.8
(b) Rs. 158.4
(c) Rs. 168.6
(d) Rs. 157.6

Q.3) What is the compound interest (in Rs) at the rate of 10%, compounded annually, for 3 years on the principal which in 8 years at the rate of 12% per annum gives Rs 4,800 as simple interest?
(a) 1,505
(b) 1,655
(c) 1,455

(d) 2,015

Q.4) The compound interest on a certain sum of money for 2 years at 5% is Rs 328, then the su is
(a) 3000
(b) 3600
(c) 3200
(d) 3400

Q.5) A part of amount Rs 10000 was invested at the rate of 8% and remaining at 10% per annum. If average annual interest rate is 9.2% then these two parts are
(a) 4000,6000
(b) 4500,5500
(c) 5000,5000
(d) 3500,6500

Q.6) The compound interest on a certain sum of money at 21% for 2 years is Rs. 11,602.5. Its simple interest (in Rs.) at the same rate and for the same period is:
(a) 10,500
(b) 10,750
(c) 16,000
(d) 12,500

Q.7) If the sum of simple interest and the difference between compound and simple interest on the sum of Rs. 10000 for 2 years is Rs. 2100 then find the difference between compound and simple interest on the same sum at the rate of double of previous rate for 3 years.
(a) Rs. 1180
(b) Rs. 1280
(c) Rs. 1250
(d) Rs. 1320

Q.8) The simple interest on a certain sum at the end of three years at 5% p.a. is Rs. 1,200. The compound interest on the same sum for the same period at the same rate is (interest compounded yearly).
(a) Rs. 820
(b) Rs. 1,800
(c) Rs. 1,260
(d) Rs. 1,261

Q.9) The compound interest on a certain sum at the end of two years is Rs. 408. The simple interest on the same sum for the same time is Rs. 400. The rate of interest per annum is:
(a) 80%
(b) 40%
(c) 4%
(d) 8%

Q.10) What will be the difference between the compound interest (interest is compounded annually) and simple interest on a sum of Rs. 3200 at the rate of 20% per annum for 2 years?
(a) Rs. 128
(b) Rs. 148
(c) Rs. 132
(d) Rs. 96

Q.11) If difference between Compound interest & Simple Interest on a certain sum of money for 2 yrs. @ 5% p.a is Rs. 122. Find the sum?
(a) Rs. 14000
(b) Rs. 15000
(c) Rs. 16000
(d) None of these

Q.12) The difference between the simple interest and compound interest (interest is compounded half yearly) on a sum at the rate of 25% per annum for one year is ₹ 4375. What will be the principal?
(a) ₹ 280000
(b) ₹ 85000
(c) ₹ 80000
(d) ₹ 75000

Q.13) The difference between the compound interest and the simple interest on a certain sum of money at 8.25% per annum for 2 years is Rs.1633.5. Find the initial sum invested.
(a) Rs. 2,50,000
(b) Rs. 2,54,000
(c) Rs. 2.38,000
(d) Rs. 2,40,000

Q.14) Find the compound interest on Rs.40,000 after 2 years 6 months at 20% per annum, if the interest is compounded half-yearly ?
(a) Rs.24,820.40
(b) Rs.25,520
(c) Rs.24,420.40
(d) Rs.24,920.40

TIME AND WORK

TYPE 1

Q.1) A alone can complete a work in 6 days and B alone can complete the same work in 8 days. In how many days both A and B together can complete the same work?

(a) 48/13 days
(b) 35/13 days
(c) 24/9 days
(d) 24/7 days

Q.2) C alone can complete a work in 20 days and D alone can complete the same work in 30 days. In how many days C and D together can complete the same work?

(a) 6 days
(b) 12 days
(c) 15 days
(d) 8 days

Q.3) If Rohit alone can complete one-fourth of a work in 32 days, then in how many days Rohit alone can complete the whole work?

(a) 96 days
(b) 128 days
(c) 64 days
(d) 118 days

Q.4) If C alone can complete two-third part of a work in 12 days, then in how many days C can complete the whole work?

(a) 24 days
(b) 15 days
(c) 8 days
(d) 18 days

Q.5) P and Q together can complete a work in 20 days. If P alone can complete the same work in 36 days, then in how many days Q alone can complete the same work?

(a) 48 days
(b) 42 days
(c) 45 days
(d) 51 days

Q.6) Anil, Deepak and Dinesh together can complete a work in 35 days. Anil and Dinesh together can complete the same work in 60 days. In how many days Deepak alone can complete the same work?

(a) 105 days
(b) 84 days
(c) 96 days
(d) 110 days

Q.7) Anil, Dinesh and Deepak together can complete a work in 40 days. Anil and Dinesh together can complete the same work in 50 days. In how many days Deepak alone can complete the same work?

(a) 90 days
(b) 200 days
(c) 150 days
(d) 75 days

Q.8) A and B together can finish a work in 10 days, B and C together can finish the same work in 15 days, and A and C together can finish the same work in 20 days. In how many days can c alone finish the same work?

(a) 90
(b) 120
(c) 80
(d) 100

Q.9) A can complete a work in '*m*' days and B can complete it in '*n*' days. How many days will it take to complete the work if both A and B work together?

(a) (M+N) Days
(b) $\frac{1}{M} \times \frac{1}{N}$ Days
(c) $\frac{M+N}{MN}$ Days
(d) $\frac{MN}{M+N}$ $Days$

Q.10) Working alone A can do a work in 72 days and B in 90 days. If they work on it together for 10 days, then what fraction of work is left?

(a) $\frac{3}{4}$
(b) $\frac{1}{4}$
(c) $\frac{4}{5}$
(d) $\frac{5}{6}$

TYPE 2

Q.1) A and B working together can complete a job in 30 days. The ratio of their efficiencies is 3 : 2. In how many days can the faster person complete the job?

(a) 50
(b) 30
(c) 40
(d) 60

Q.2) Rama and Hari can together finish a piece of work in 15 day. Rama works twice as fast as Hari, then Hari alone can finish work in :

(a) 45 days
(b) 30 days
(c) 25 days
(d) 20 days

Q.3) A is twice as good as a workman as B. And together, they finish a piece of work in 20 days. In how many days, will A alone finish the work?

(a) 30 days
(b) 25 days
(c) 26 days
(d) 28 days

Q.4) A can do a certain job in 12 days. B is 60% more efficient than A. To do the same job B alone would take?

(a) $7\frac{1}{2}$ days
(b) 8 days
(c) 10 days
(d) 7 days

Q.5) A can do a piece of work in 15 days. B is 25% more efficient than A and C is 40% more efficient than B. A and C work together for 3 days and then C leaves. A and B together will complete the remaining work in:

(a) 2.5 DAYS
(b) 3.5 DAYS
(c) 4 DAYS
(d) 3 DAYS

Q.6) A, B and C together can build a wall in 12 days. C is four times as productive as B and A alone can build the wall in 48 days. In how many days A and B working together can build the wall?

(a) 20
(b) 30
(c) 80
(d) 40

Q.7) X can do a work in 3 days, Y does three times the same work in 8 days, and Z does five times the same work in 12 days if they have to work for 6 hours in a day. Then in how much time can they complete the work together?

(a) 4 hours
(b) 5 hours 20 minutes
(c) 4 hours 10 minutes
(d) 5 hours

Q.8) A can finish 80% of a task in 12 days and B can finish 20% of the same task in 2 days. They started the task together, but B left after 2 days and A continued to work. In how many days was the entire task completed?

(a) 17.5
(b) 10
(c) 15
(d) 12

Q.9) A is thrice as good a workman as B. C alone takes 48 days to paint a house. All three A,B and C working together take 16 days to paint the house. It will take how many days for B alone to paint the house?

(a) 72
(b) 64
(c) 96
(d) 32

TYPE 3

Q.1) 16 workers working 8 hours per day can demolish a building in 32 days. In how many days 24 workers working 12 hours per day can demolish the same building?
(a) 128/3 days
(b) 56/3 days
(c) 128/9 days
(d) 56/9 days

Q.2) 40 mechanics can repair a bike in 56 days. In how many days 32 mechanics will do the same work?
(a) 60 days
(b) 56 days
(c) 80 days
(d) 70 days

Q.3) 40 persons can repair a bridge in 12 days. If 8 more persons join them, then in how many days bridge can be repaired?
(a) 11 days
(b) 10 days
(c) 9 days
(d) 8 days

Q.4) If 15 workers can earn ₹1,800 in 10 days. Find the earning (in ₹) of 5 workers in 8 days.
(a) 400
(b) 360
(c) 540
(d) 480

Q.5) A alone can do a piece of work in 12 days and B alone in 16 days. They undertook to do the work for ₹350. How much will B get?
(a) ₹150
(b) ₹200
(c) ₹250
(d) ₹180

Q.6) 30 men working 8 hours per day can dig a pond in 16 days. By working how many hours per day can 32 men dig the same pond in 20 days?
(a) 7 hours per day
(b) 5 hours per day
(c) 8 hours per day
(d) 6 hours per day

Q.7) 9 men and 12 women can complete a work in 4 days, whereas 3 men and 6 women can complete it in 10 days. The number of days in which 15 women will complete the work is:
(a) 9
(b) 10
(c) 12
(d) 8

Q.8) Two men and 7 women can complete a work in 28 days, whereas 6 men and 16 women can do the same work in 11 days. In how many days will 5 men and 4 women, working together, complete the same work?
(a) 22
(b) 18
(c) 14
(d) 20

Q.9) Had been one man less, then the number of days required to do a piece of work would have been one more. If the number of Man Days required to complete the work is 56, how many workers were there?
(a) 14
(b) 9
(c) 6
(d) 8

Q.10) A certain number of persons can finish a task in 85 days. If there were 15 persons more, it would have taken 25 days less for the task to be completed. How many persons are there in the beginning?
(a) 30
(b) 45
(c) 40
(d) 36

Q.11) An officer undertakes to complete a job in 300 days. He employs 300 people for 60 days and they complete half of the work. He then reduces the number of people to 100, who work for 120 days, after which there are 20 days holiday. How many people must be employed for the remaining period to finish the work?

(a) 50
(b) 100
(c) 75
(d) 60

Q.12) Working 2 hours in a day, P can complete a work in 10 days and working 5 hours in a day, Q can complete the same work in 6 days. Working 3 hours in a day, in how many days both P and Q together can complete the same work?

(a) 3 days
(b) 6 days
(c) 4 days
(d) 5 days

TYPE 4

Q.1) A alone can complete a work in 14 days and B alone can complete the same work in 21 days. A and B start the work together but A leaves the work after 4 days of the starting of work. In how many days B will complete the remaining work?

(a) 9 days
(b) 16 days
(c) 12 days
(d) 11 days

Q.2) A alone can make a chair in 40 days and B alone can make the same chair in 24 days. If A and B are working on alternate days and A works on the first day, then in how many days will the chair be completed?

(a) 34 days
(b) 32 days
(c) 28 days
(d) 30 days

Q.3) Surbhi can do a piece of work in 24 days. She completed 3/8 of the work and then left it. Amit can complete the remaining work in 10 days. Working together, they will complete 125% of the same work in:

(a) 10 days
(b) 9 days
(c) 12 days
(d) 15 days

Q.4) A can complete $33\frac{1}{3}$% of a work in 5 days and B can complete 40% of the same work in 10 days. They work together for 5 days and then B left the work. A alone will complete the remaining work in:

(a) $7\frac{1}{2}$ days
(b) 5 days
(c) 7 days
(d) $5\frac{1}{2}$ days

Q.5) F alone can complete a work in 24 days and G alone can complete the same work in 32 days. F and G start the work together but G leaves the work 8 days before the completion of work. In how many days the total work will be completed?

(a) 130/5 days
(b) 106/7 days
(c) 114/7 days
(d) 120/7 days

Q.6) A can do $\frac{1}{3}$ of a work in 30 days. B can do $\frac{2}{5}$ of the same work in 24 days. They worked together for 20 days. C completed the remaining work in 8 days. Working together A, B and C will complete the same work in:

(a) 15 days
(b) 10 days
(c) 18 days
(d) 12 days

Q.7) A can complete a certain work in 35 days and B can complete the same work in 15 days. They

worked together for 7 days, then B left the work. In how many days will A alone complete 60% of the remaining work?

(a) 5
(b) 8
(c) 10
(d) 7

Q.8) A and B can do a work in 15 days and 10 days respectively. They begin the work together but B leaves after two days. Now A completes the remaining work. The total number of days needed for the completion of the work is:

(a) 15 days
(b) 18 days
(c) 12 days
(d) 10 days

Q.9) 10 men can finish a piece of work in 10 days, whereas it takes 12 women to finish it in 10 days. If 8 men and 6 women undertake to complete the work, then in how many days will they complete it?

(a) $8\frac{9}{13}$
(b) $6\frac{9}{13}$
(c) $5\frac{9}{13}$
(d) $7\frac{9}{13}$

Q.10) 12 men and 16 women can complete a job in 5 days. 13 men and 24 women can complete the same job in 4 days. How long in days, will 5 men and 10 women take to complete the same job?

(a) 5
(b) 12
(c) 10
(d) 15

Q.11) A and B together can do a certain work in 20 days, B and C together can do it in 30 days, and C and A together can do it in 24 days, B alone will complete $\frac{2}{3}$ part of the same work is:

(a) 20 days
(b) 16 days
(c) 24 days
(d) 32 days

Q.12) Ravi, Manish and Naveen alone can complete a work in 30 days, 15 days and 10 days respectively. They start the work together but Ravi leaves the work after 2 days of the starting of the work and Manish leaves the work after 3 days more. In how many days Naveen will complete the remaining work?

(a) 3 days
(b) 4 days
(c) 1 day
(d) 2 days

Q.13) K alone can complete a work in 20 days and M alone can complete the same work in 30 days. K and M start the work together but K leaves the work after 5 days of the starting of work. In how many days M will complete the remaining work?

(a) 35/2 days
(b) 25/2 days
(c) 55/2 days
(d) 45/2 days

Q.14) A, B, and C can do a work separately in 18, 36 and 54 days, respectively. They started the work together, but B and C left 5 days and 10 days, respectively, before the completion of the work. In how many days was the work finished?

(a) 12 days
(b) 13 days
(c) 15 days
(d) 14 days

Q.15) A and B can do a job in 10 days and 5 days, respectively. They worked together for two days, after which B was replaced by C and the work was finished in the next three days. How long will C alone take to finish 60% of the job?

(a) 18 days
(b) 30 days
(c) 25 days
(d) 24 days

TYPE 5

Q.1) In a press, there are three types of printing machines, P, Q and R. Machine P can print 10,000 pages in 8 hours, machine Q can finish the same task in 10 hours and machine R can finish the same task in 15 hours. All the three machines start the work at 9 : 00 a.m. Machine P breaks down at 11 : 00 a.m. and machines Q and R finish the task. The approximate time of completion of the job is

(a) 2 : 05 p.m.
(b) 2 : 30 p.m.
(c) 1 : 50 p.m.
(d) 1 : 30 p.m.

Q.2) A can do 33 $1/3$% of a work in 10 days and B can do 66 2/3% of the same work in 8 days. Both together worked for 8 days then C alone completes the remaining work in 3 days. A and C together will complete $\frac{5}{6}$ part of the original work in:

(a) 20 days
(b) 15 days
(c) 12 days
(d) 18 days

Q.3) In a press there are three types of printing machines A, B, and C. Machine A can print ten thousand pages in 8 hours, machine B can do the same task in 10 hours, and machine C can do the same task in 12 hours. All three machines start the task at 9:00 a.m. Machine A breaks down at 11:00 a.m. and machines B and C continue working. At 12:00 noon machine B also breaks down and machine C alone has to complete the remaining task. What is the approximate time of completion of the task?

(a) 1:54 p.m.
(b) 2:24 p.m.
(c) 12:45 p.m.
(d) 2:40 p.m.

TYPE 6

Q.1) The efficiencies of A , B and C are in the ratio 5 : 3 : 8. Working together they can complete a work in 30 days. A and B worked together for 20 days. The remaining work will be completed by C alone in :

(a) 30 DAYS
(b) 32 DAYS
(c) 40 DAYS
(d) 36 DAYS

Q.2) The ratio of the efficiencies of A, B and C is 4 : 5 : 3. Working together, they can complete that work in 25 days. A and C together will complete 35% of the work in :

(a) 15 DAYS
(b) 18 DAYS
(c) 12 DAYS
(d) 10 DAYS

Q.3) The ratio of the efficiencies of A, B and C is 7 : 5 : 4 Working together, they can finish a work in 35 days. A and B work together for 28 days. The remaining work will be completed (in days) by C alone :

(a) 49 DAYS
(b) 56 DAYS
(c) 63 DAYS
(d) 60 DAYS

Q.4) The ratio of the efficiencies of A, B and C is 7 : 5 : 8. Working together, they can complete a piece of work in 42 days. B and C worked together for 21 days and the remaining work was completed by A alone. The whole work was completed in:

(a) 99 DAYS
(b) 102 DAYS
(c) 96 DAYS
(d) 93 DAYS

Q.5) The efficiencies of A , B and C are in the ratio 2 : 5 : 3. Working together, they can complete a task in 12 days. In how many days can A alone complete 30% of that task?

(a) 12 DAYS
(b) 15 DAYS
(c) 18 DAYS

(d) 20 DAYS

Q.6) A alone can do a work in 11 days. B alone can do the same work in 22 days. C alone can do the same work in 33 days. They work in the following manner:
Day 1: A and B work.
Day 2: B and C work.
Day 3: C and A work.
Day 4: A and B work. And so on.

In how many days will the work be completed?
(a) 10 DAYS
(b) 9 DAYS
(c) 12 DAYS
(d) 18 DAYS

Q.7) A is 100% more efficient than B. While they take 90days to finish a work together. Then in how many days they can finish that work separately?
(a) 120, 240
(b) 125, 250
(c) 135, 270
(d) None

TYPE 7

Q.1) If 3 men or 5 women can reap a field in 43 days how long will 5 men and 6 women take to reap it?
(a) 15 days
(b) 25 days
(c) 18 days
(d) 12 days

Q.2) If 2 men or 4 women can reap a field in 44 days, how long will 3 men and 5 women take to reap the field?
(a) 12 days
(b) 8 days
(c) 10 days
(d) none

Q.3) 2 men or 3 women or 4 boys can do a work in 52 days. They in how many days will 1 man, 1 woman and 1 boy do the work?
(a) 24 days
(b) 42 days
(c) 36 days
(d) 48 day

Q.4) 3 men or 4 women or 5 boys can do a work in 47 days. Then in how many days will 1 man, 1 woman and 1 boys do the work?
(a) 40 days
(b) 50 days
(c) 60 days
(d) 45 days

Q.5) Two women Ganga and Jamuna, working separately can reap a field in 8 and 12 hours respectively. If they work for an hour alternatively, Ganga beginning at 9am, when will the work be finished?
(a) 6 : 30 pm
(b) 8 : 30 pm
(c) 6 : 30 am
(d) 7 : 30 pm

TYPE 8 (CONTRACTOR BASED)

Q.1) A contractor undertakes to dig a canal 12 km long in 350 days and employees 45 men. After 200 days he finds that only 4.5 km of the canal is complete. Find the no. of extra men he must employee to finish the work in time?
(a) 22
(b) 44
(c) 33
(d) 55

Q.2) A builder decided to build a farmhouse in 45 days. He employed 150 men in the beginning and 120 more after30 days and completed the construction in stipulated time. If he had not employed the additional men, how many days behind schedule would it have been finished?
(a) 12 days
(b) 10 days
(c) 15 days
(d) 8 days

Q.3) A team of 30 men is supposed to work in 38 days. After25 days 5 more men were employed and work was finished 1 day earlier. How many days would have been delayed if 5 more men were not employed?
(a) 1 day
(b) 2 days
(c) 3 days
(d) None

Q.4) A alone takes 27 hrs. more to complete the work then both A and B work together. If B works alone, he takes3 hrs more to complete the work, then A and B work together. In what time A and B finish that work together?
(a) 9 hrs
(b) 14 hrs
(c) 7 hrs
(d) None

Q.5) A can complete work in 5 more days than B. While Ado the same work 9 more days than C. If A and B complete the work in same time in which C alone do. Then in how many days A will do the same work alone?
(a) 12 days
(b) 15 days
(c) 10 days
(d) None

PIPE AND CISTERN

TYPE 1

Q1. Two pipes can fill a tank in 15 hours and 4 hours, respectively, while a third pipe can empty it in 12 hours. How long (in hours) will it take to fill the empty tank if all the three pipes are opened simultaneously?

(a) 30/7
(b) 20/7
(c) 50/7
(d) 15/7

Q2. Two pipes A and B can fill a cistern in 12.5hrs and 25 hours, respectively. The pipes are opened simultaneously and it is found that due to a leakage in the bottom, it took 1 hour 40 minutes more to fill the cistern. When the cistern is full, in how much time will the leak empty the cistern?

(a) 48 hours
(b) 42 hours
(c) 45 hours
(d) 50 hours

Q3. Pipes A and B can fill a tank in 20 hours and 30 hours respectively, whereas pipe C alone can empty the full tank in 10 hours. Pipes A and B are opened together for 3.5 hours and then closed. If pipe C is opened, It will empty the tank in:

(a) 2 hours 15 minutes
(b) 2 hours
(c) 2 hours 55 minutes
(d) 2 hours 45 minutes

Q4. Pipes A and B can fill a tank in 18 minutes and 27 minutes, respectively. C is an outlet pipe. When A, B and C are opened together, the empty tank is completely filled in 54 minutes. Pipe C alone can empty the full tank in:

(a) 14.5 MINS
(b) 14 MINS
(c) 13.5 MINS
(d) 13 MINS

Q5. A pipe can fill a cistern in 20 minutes whereas the cistern when full can be emptied by a leak in 28 minutes. When both are opened, The time taken to fill the cistern is:

(a) 80 min
(b) 70 min
(c) 60 min
(d) 48 min

Q6. Tap A can fill a tank in 6 hours and tap B can empty the same tank in 10 hours. If both taps are opened together, then how much time (in hours) will be taken to fill the tank?

(a) 16
(b) 15
(c) 18
(d) 20

Q7. An inlet pipe takes 8 hours to fill a tank. An outlet pipe takes 12 hours to empty it. If both pipes are opened simultaneously, in how many hours will the tank be filled?

(a) 6
(b) 8
(c) 24
(d) 12

TYPE 2

Q1. Pipe A is a filling pipe, while B and C are emptying pipes. Pipe A alone can fill a tank in 10 hours and pipe C alone can empty the full tank in 24 hours. If all three pipes are opened together, the tank is completely filled in 40 hours. In how many hours can pipe B alone empty two-third part of the tank?

(a) 24
(b) 20
(c) 18
(d) 30

Q2. Pipes A and B can fill a tank in 10 hours and 13 $\frac{1}{3}$ hours, respectively. Pipe C is an emptying pipe. When all three pipes are opened together, the tanks is filled in 8 hours. Pipe C alone can empty 60% part of the tank in:

(a) 12 hours
(b) 15 hours
(c) 9 hours
(d) 10 hours

Q3. Pipes A and B can fill a tank in 30 minutes and 37 $\frac{1}{2}$ minutes, respectively. C is an outlet pipe. When all the three pipes are opened together, then the tank is full in 25 minutes. In how much time (in minutes) can C alone empty $\frac{2}{5}$th part of the tank?

(a) 24 minutes
(b) 30 minutes
(c) 20 minutes
(d) 25 minutes

Q4. Pipes A and B can fill a tank in 16 hours and 24 hours, respectively, whereas pipe C can empty the full tank in 40 hours. All three pipes are opened together, but pipe C is closed after 10 hours. After how many hours will the remaining part of the tank be filled?

(a) 5 HRS
(b) 5.5 HRS
(c) 2 HRS
(d) 2.5 HRS

Q5. Two pipes A and B can fill a tank in 12 hours and 18 hours, respectively. Both pipes are opened simultaneously. In how much time will the empty tank be filled completely?

(a) 10 hours 24 minutes
(b) 9 hours 30 minutes
(c) 8 hours
(d) 7 hours 12 minutes

Q6. Pump A can fill the empty tank in 8 hours and pump B can fill the same empty tank in 12 hours. If both pumps are opened at the same time and kept open for 3 hours, then what part of the tank will be filled?

(a) 3/4
(b) 9/19
(c) 5/8
(d) 7/8
(e) 12/23

TYPE 3

Q1. Pipes X and Y can fill a tank in 30 minutes and 45 minutes, respectively, whereas pipe Z can empty the full tank in 1 hour. Pipes X and Y are opened together for 10 minutes. Then, pipe X is closed, Z is opened instantly and Y continued to fill. The total time (from the beginning) taken to fill the tank is:

(a) 80 minutes
(b) 100 minutes
(c) 75 minutes
(d) 90 minutes

Q2. Three pipes can fill a tank in 15 hours, 12 hours and 10 hours, respectively. If all the three pipes are opened simultaneously for 3 hours, then what percentage of the tank will remain unfilled?

(a) 17%
(b) 50%
(c) 33%
(d) 25%

Q3. Pipes A, B and C can fill a tank in 15, 30 and 40 hours, respectively. Pipes A, B and C are opened at 6 a.m., 8 a.m. and 10 a.m., respectively, on the same day. When will the tank be full?

(a) 11:20 p.m.
(b) 3:20 p.m.
(c) 7:20 p.m.
(d) 5:20 p.m.

Q4. A pump can fill a tank with water in 3 hours. Because of a leak, it took 313313 hours to fill the

tank. In how many hours can the leak alone drain all the water of the tank when it is full?
(a) 21
(b) 10
(c) 30
(d) 15

Q5. Pipes A and B can fill a tank in 16 hours and 24 hours, respectively, whereas pipe C can empty the full tank in 40 hours. All three pipes are opened together, but pipe A is closed after 10 hours. After how many hours will the remaining part of the tank be filled?
(a) 10
(b) 20
(c) 12.5
(d) 15.5

Q6. Two pipes A and B can fill a tank in 15 hours and 18 hours, respectively. Both pipes are opened simultaneously to fill the tank. In how many hours will the empty tank be filled?
(a) $8\frac{2}{11}$
(b) $7\frac{2}{11}$
(c) $9\frac{2}{11}$
(d) $10\frac{2}{11}$

Q7. A pump can fill a tank with water in 1 hour. Because of a leak, it took $1\frac{1}{3}$ hours to fill the tank. In how many hours can the leak alone drain all the water of the tank when it is full?
(a) 2
(b) 5
(c) 4
(d) 1

Q8. A tap can fill up a tank of 1250 litres in 4 hours, whereas another tap can fill the same tank in 8 hours. An outlet tap can empty that tank in 6 hours. If all the three taps are opened simultaneously, then how much time will it take to fill the tank completely?
(a) 4.2 hours
(b) 4.5 hours
(c) 5 hours
(d) 4.8 hours

Q9. Two pipes A and B can fill a tank in 12 minutes and 15 minutes, respectively. When an outlet pipe C is also opened, then the three pipes together can fill the tank in 10 minutes. In how many minutes can C alone empty the full tank?
(a) 18
(b) 20
(c) 16
(d) 24

Q10. A tap can fill a tank in 4 hours. Another tap can fill the same tank in 6 hours. If both the taps are opened at the same time, then in how much time will the empty tank be filled completely?
(a) 3 h
(b) 2 h 25 min
(c) 2 h 30 min
(d) 2 h

TYPE 4

Q1. If two pipes function simultaneously, a tank is filled in 12 hours. One pipe fills the tank 10 hours faster than the other. How many hours does the faster pipe alone take to fill the tank?
(a) 12
(b) 20
(c) 15
(d) 18

Q2. Pipes A and B can fill a tank in 12 minutes and 15 minutes, respectively. The tank when full can be emptied by pipe C in x minutes. When all the three pipes are opened simultaneously, the tank is full in 10 minutes. The value of x is:
(a) 24
(b) 18
(c) 15
(d) 20

Q3. Pipes A and B can fill a tank in 43.2 minutes and 108 minutes, respectively. Pipe C can empty it at 3 litres/minute. When all the three pipes are opened together, they fill the tank in 54 minutes. The capacity (in litres) of the tank is:

(a) 160
(b) 216
(c) 200
(d) 180

Q4. Water flows into a tank 180 m × 140 m through a rectangular pipe of 1.2 m × 0.75 m at a rate of 15 km / h. In what time will the water rise by 4 m?

(a) 6 hours 42 minutes
(b) 7 hours 28 minutes
(c) 8 hours 12 minutes
(d) 5 hours 46 minutes

Q5. 'A' pipe can empty a tank in 20 minutes. The second pipe 'B' has a diameter twice as that of 'A'. If both A & B pipe are attached to the tank how much time will be required to empty the tank?

(a) 10.5 minutes
(b) 25 minutes
(c) 15 minutes
(d) 4 minutes

Q6. A pipe can fill a tank in 10 minutes while another pipe can empty it in 12 minutes. If the pipes are opened alternately each for 1 minute, beginning with the first pipe. the tank will be full after (in minutes):

(a) 90
(b) 109
(c) 108
(d) 120

Q7. Two pipes X and Y can fill an empty tank in 't' minutes. If pipe X alone takes 6 minutes more than 't' to fill the tank and Y alone takes 54 minutes more than 't' to fill the tank, then X and Y together will fill the tank in:

(a) 18min
(b) 12min
(c) 27 min
(d) 24min

Q8. A tank can be filled by pipe A in 2 hours and pipe B in 6 hours. At 10 A.M. pipe A was opened. At what time will the tank be filled if pipe B is opened at 11 A.M.?

(a) 12.45 A.M.
(b) 5 P.M
(c) 11.45 A.M.
(d) 12 P.M.

Q9. A pipe can fill a tank in *x* hours and another can empty it in *y* hours. They can together fill it in (*y* > *x*)

(a) $\frac{XY}{Y-X}$
(b) $x - y$ hours
(c) $y - x$ hours
(d) $\frac{XY}{Y-X}$

Q10. Which of these pipes will empty a pool the fastest?

(i) One pipe of diameter 60 cm
(ii) Two pipes of diameter 30 cm Each
(iii) Three pipes of diameter 20 cm each

(a) (i)
(b) (iii)
(c) (ii)
(d) None of these

Q11. A tap drips at a rate of one drop/sec. 600 drops make 100ml. The number of litres wasted in 300 days is

(a) 4320000
(b) 432000
(c) 43200
(d) 4320

Q.12 Having the same capacity 9 taps fill up a water tank in 20 minutes. How many taps of the same capacity are required to fill up the same water tank in 15 minutes?

(a) 10

(b) 12
(c) 15
(d) 18

Q13. Tap *A*, *B* and *C* are connected toa water tank and the rate of flow of water is 42 litres/hr, 56 litres/ hr and 48 litres/hr respectively. Tap *A* and *B* fill the tank while tap *C* empties the tank. If all the three taps are opened simultaneously, the tank gets completely filled up in 16 hours. What is the capacity of the tank?
(a) 960 litres
(b) 2346 litres
(c) 1600 litres
(d) 800 litres

Q14. Two full tanks, one shaped like a cylinder and the other like a cone, contain jet fuel. The cylindrical tank holds 500 L more than the conical tank. After 200 L of fuel has been pumped out from each tank, the cylindrical tank contains twice the amount of fuel in the conical tank. How many litres of fuel did the cylindrical tank have when it was full?
(a) 700 L
(b) 1,000 L
(c) 1,100 L
(d) 1,200 L

Q15. Two pipes A and B can fill a tank in 12 minutes and 24 minutes, respectively, while a third pipe C can empty the full tank in 32 minutes. All the three pipes are opened simultaneously. However, pipe C is closed 2 minutes before the tank is filled. In how much time (in minutes) will the tank be full?
(a) 9
(b) 10
(c) 12
(d) 8

Q.16 There are 15 pipes some are inlets and some are outlets. An inlet pipe can fill the tank in 16 hours and an outlet pipe can empty the tank in 20 hours. If all pipes opened simultaneously, tank is filled in 26 hours 40 minutes. Find the number of outlet pipes.
(a) 8
(b) 7
(c) 10
(d) 6

Q17. Pipes A, B and C can fill a tank in 20, 30 and 60 hours, respectively. Pipes A, B and C are opened at 7 am, 8am, and 9 am, respectively, on the same day. When will the tank be full?
(a) 4 : 40 pm
(b) 5 : 40 pm
(c) 6 : 20 pm
(d) 7 : 20 pm

MIXTURE & ALLIGATION

TYPE 1

Q.1) A canister holds 36 L of mixture of milk and water in the ratio 3:1. 15 litres of milk is added to the canister. The new ratio in the mixture is:
(a) 12:5
(b) 14:3
(c) 7:4
(d) 9:4

Q.2) In 225 L mixture of milk & water; The ratio of milk and water is 4 : 1. The quantity of water required to make the ratio of milk & water 3 : 1 is
(a) 12 litres
(b) 10 litres
(c) 9 litres
(d) 15 litres

Q.3) A scientist prepares a mixture with two chemicals; chemical 1 and chemical 2 in proportion of 2 : 3 and makes a total concoction of 150 ml. How many ml of chemical 1 has been used?
(a) 80
(b) 60
(c) 90
(d) 20

Q.4) A drink contains liquids P and Q in the ratio 4 : 7. If 50 ml of first liquid is added to drink weighing 440 ml, then ratio of two mixture in it now becomes?
(a) 5 : 4
(b) 5 : 8
(c) 3 : 5
(d) 3 : 4

Q.5) There are three buses of equal capacity. The ratio of male and female passenger in first bus is 3 : 4, that in second bus is 2 : 5 and in third bus it is 7 : 5. If the passengers are boarded into the train then find the ratio of male to female in the train.
(a) 143 : 109
(b) 105 : 153
(c) 109 : 143
(d) 153 : 105

Q.6) A 400 gram mixture contains 30% zinc, 45% iron and the remaining copper, so how many grams of copper will be in a 400 gram mixture?
(a) 200 gram
(b) 100 gram
(c) 150 gram
(d) 160 gram

Q.7) How many litres of acid is there in 12 litres of a solution where concentration of acid is 20 %?
(a) 1.2 litres
(b) 3.6 litre
(c) 4.8 litres
(d) 2.4 litres

Q.8) A mixture contains milk and water in the ratio of 4 : 3. When 5 litre of water is added to this mixture, the ratio of milk and water becomes 6 : 7. The quantity of milk in the mixture is:
(a) 12 L
(b) 5 L
(c) 15 L
(d) 10 L

Q.9) A mixture contains milk and water in the ratio 5 : 3. If 5 litres of milk is added to the mixture, the ratio becomes 7 : 3. What is the quantity of milk in the new mixture?
(a) 20 litres
(b) 12.5 litres
(c) 17.5 litres
(d) 15 litres

TYPE 2

Q1. In a mixture of sugar and water; Sugar is 32% If 14 litre of sugar is added then sugar becomes 40%; Find initial quantity of the Mixture?
(a) 101L
(b) 103L
(c) 105L
(d) 109L

Q2. In a mixture of salt and water; salt is 15%. If some salt is added into the mixture then salt becomes 25% and the Final quantity of the mixture becomes 102L; Find the initial quantity of the mixture?
(a) 40 L
(b) 60 L
(c) 70 L
(d) 90 L

Q3. A milkman uses three containers for selling milk, their capacities being 40 L, 30 L and 20 L respectively. He fills respectively 87.5%, 80% and 90% of the containers with a mix of milk and water

in the ratios, 3 : 2, 5 : 1 and 7 : 2 respectively. What is the ratio of the total quantity of milk to that of water carried by him?
(a) 35 : 9
(b) 3 : 12
(c) 5 : 2
(d) 7 : 2

Q.4) 60 kg of alloy P contains $17\frac{1}{12}$% Iron while 55kg alloy Q contains 7.5% Iron, then what would be the percentage content of Iron in the alloy so formed by mixing P and Q?
(a) 12.5%
(b) 15.5%
(c) 13.5%
(d) 16.5%

Q.5) A solution has two liquids A and B. The concentration of liquid B in the solution is 70%. Solution A is added to the mixture so that the concentration of liquid A becomes 50%. By what percentage has the total volume of the mixture increased?
(a) 55%
(b) 45%
(c) 40%
(d) 50%

Q.6) A and B are two mixture which are prepared by mixing alcohol, beer and water in the ratio of 2 : 3 : 4 and 3 : 4 : 5 respectively. If equal quantities of mixture are mixed to form a third mixture C then what is the ratio of alcohol, beer and water in mixture C?
(a) 34 : 47 : 45
(b) 27 : 48 : 51
(c) 17 : 24 : 31
(d) 34 : 55 : 89

Q.7) The ratio (by volume) of milk and water in a mixture is 2 : 1. If we add 12 litres of water in the mixture, then the ratio of milk and water becomes 4 :3. What is the quantity of water in the new mixture?
(a) 36 litres
(b) 48 litters
(c) 24 litres
(d) 84 litres

Q.8) The ratio of milk and water in a mixture is 4 : 3. If we add 2 litres of water, the ratio of milk and water becomes 8 : 7. What is the quantity of the final mixture?
(a) 18 litres
(b) 30 litres
(c) 24 litres
(d) 28 litres

Q.9) A mixture of 40 litre of milk and water contains 10% water. How much water must be added to make water 20% in the new mixture?
(a) 4
(b) 2
(c) 8
(d) 5

Q.10) The acid and water in two vessels P and Q are in the ratio of 4 : 5 and 3 : 2, respectively. In what ratio, should the liquid in both the vessels be mixed to obtain a new mixture in vessel R containing acid and water in the ratio of 10 : 9?
(a) 9 : 10
(b) 6 : 7
(c) 5 : 4
(d) 2 : 5

Q.11) 100 Liters of mixture contains 15% water and rest milk, the amount of milk that must be added so that the resulting mixture contains 87.5% milk is?
(a) 20 L
(b) 15 L
(c) 25 L
(d) 10 L

Q.12) A trader has 44 kg of rice, a part of which he sells at 14% profit and the rest at 8% loss. On the whole, his loss is 4%. What is the quantity sold at 14% profit and that at 8% loss?
(a) 36 kg
(b) 20 kg
(c) 28 kg
(d) 30 kg

TYPE 3

Q.1) A shopkeeper purchased two varieties of sugar costing Rs 40/kg and Rs 50/kg. 40 kg of first variety is mixed with 40 kg sugar of other variety and mixture is sold at Rs 54/kg. Find the profit percent earned in this transaction.
(a) 15%
(b) 20%
(c) 16.67%
(d) 18.25%

Q.2) A, B, C are three jars of equal capacity and each contain mixture of pure juice & water in the ratio 3 : 1, 5 : 1, 3 : 2 respectively. Whole content of these

jars is mixed in jar D. what is the ratio of pure juice to the water in jar D?
(a) 111 : 39
(b) None of these
(c) 11 : 4
(d) 131 : 49

Q.3) A vessel contains 45 liters of whisky and vodka in the ratio of 8 : 7. If one – fourth of whisky is taken out and filled with 3 liters of vodka and again half of vodka is taken out and mixed with 3 liters of whisky, then find the ratio of whisky and vodka in the resultant mixture?
(a) 4 : 7
(b) 7 : 4
(c) 3 : 5
(d) 5 : 3

Q.4) A plastic bucket is full of paint. If out of the bucket 11 liters are removed and a thinning liquid substituted the paint. The process is repeated again, then, the ratio between paint and thinner becomes 64 : 17. What is the capacity of the plastic bucket?
(a) 88 litres
(b) 99 litres
(c) 98 litres
(d) 94 litres

Q.5) Raman purchased two different kinds of milk. In the first mixture, the ratio of milk and water is 3: 4 and in the second mixture, it is 5: 6. If he mixes the two given mixture and makes the mixture of 36 litres in which the ratio of milk and water is 4: 5, find the quantity of the first mixture that is required to make the third mixture.
(a) 9 L
(b) 22 L
(c) 14 L
(d) 28 L

Q.6) Two glasses A and B of quantity 200 ml contains milk-water mixture in the ratio 3 : 2 and 3 : 7 respectively. From glass A, 50 ml of the mixture is removed and replaced with water. From glass B, 100 ml of mixture is removed and replaced with milk. If the mixture of the two glasses is mixed, what is the ratio of milk and water in the final mixture?
(a) 1 : 1
(b) 3 : 1
(c) 4 : 1
(d) 11 : 9

Q.7) In 60L mixture of milk and water; the ratio of milk and water is 2:3. How much water should be added in the mixture so that the ratio of milk and water becomes 1:4?
(a) 60L
(b) 50L
(c) 40L
(d) None of these

Q.8) A mixture contains milk and water in the ratio of 6 : 5. on adding 60L of water ;the ratio of milk and water becomes 2:5 then find quantity of water contained in the initial mixture?
(a) 40L
(b) 30L
(c) 20L
(d) None of these

Q.9) From a container having pure milk, 20% is replaced by water and the process in repeated thrice. At the end of third operation the milk is
(a) 40% pure
(b) 50% pure
(c) 51.2% pure
(d) 48.8% pure

Q.10) There are 81 litre pure milk in a container. One-third of milk is replaced by water in the container. Again one-third of mixture is replaced by equal amount of water. Then the ratio of milk and water in the new mixture is:
(a) 3 : 4
(b) 2 : 3
(c) 1 : 1
(d) 4 : 5

Q.11) A and B are solutions of acid and water. The ratios of water and acid in A and B are 4 : 5 and 1 : 2 respectively. If x litres of A is mixed with y litres of B, then ratio of water and acid in the mixture becomes 8 :13. What is x : y ?
(a) 5 : 6
(b) 2 : 5
(c) 3 : 4
(d) 2 : 3

TYPE 4

Q1. Final Ratio between milk to water in a vessel is 64 : 61. If initially there was 100 L milk. Some part of mixture is taken out and replaced by water and this process is further repeated 2 times more, find the quantity of mix replaced.

(a) 20 litres
(b) 50 litres
(c) 30 litres
(d) 40 litres

Q2. A and B are two alloys of gold and copper prepared by mixing metals in the ratio 5 : 3 and 5 : 11 respectively. Equal quantities of these alloys are melted to form a third alloy C. The ratio of gold and copper in the alloy C is
(a) 25 : 13
(b) 33 : 15
(c) 15 : 17
(d) 17 : 15

Q3. A container contains 40 litres of concentrated syrup. 4 litres of it was taken out and replaced with water and the same process was repeated thrice. In the end, what percentage of the solution will be syrup in the container?
(a) 67.23%
(b) 65.61%
(c) 63.72%
(d) 64.15%

Q4. The ratio of milk to water in a 100 litres mixture is 2 : 3. 10 litres of this mixture is withdrawn and replaced with milk. This process is repeated 2 more times. What is the percentage of milk in final mixture?
(a) 56.26 percent
(b) 58.21 percent
(c) 51.24 percent
(d) 54.27 percent

Q5. A Jar contains a mixture of two liquids A& B in the ratio 4:1. When 10 litres of the mixture is taken out and 10 litres of liquid B is poured into the jar, the ratio becomes 2:3. How many litre of liquid A was contained in the jar?
(a) 12
(b) 16
(c) 20
(d) 24

Q6. Two vessels A & B contain milk and water mixed in the ratio 8:5 and 5:2 respectively. The ratio in which these two mixtures be mixed to get a new mixture containing 900/13% milk is
(a) 3:5
(b) 5:2
(c) 5:7
(d) 2:7

AVERAGE

TYPE 1

Q1. The average of 35, 39, 41, 46, 27 and x is 38. What is the value of x?

(a) 44
(b) 40
(c) 38
(d) 42

Q2. What will be the average of first four positive multiples of 8?

(a) 16
(b) 20
(c) 32
(d) 24

Q3. The average age of 50 teachers of a school is 66 years and the average age of 60 teachers of another school is 55 years. What will be average age of teachers of both the schools together?

(a) 60 years
(b) 57.5 years
(c) 65 years
(d) 62.5 years

Q4. The average of numbers N_1 and N_2 is 17. The average of numbers N_2 and N_3 is 44. What is the difference between N_3 and N_1?

(a) 54
(b) 35
(c) 27
(d) 36

Q5. The average of 23, 27, 29, 36, 47 and x is 35. What is the value of x?

(a) 45
(b) 52
(c) 48
(d) 39

Q6. What is average of 410, 475, 525, 560 and 720?

(a) 561
(b) 542
(c) 538
(d) 526

Q7. The average weight of 12 boxes is 63 kg. If four boxes having an average weight of 70 kg are removed, then what will be new average weight of the remaining boxes?

(a) 60 kg
(b) 59 kg
(c) 60.5 kg
(d) 59.5 kg

TYPE 2

Q1. If a 32 year old man is replaced by a new man, then the average age of 42 men increases by 1 year. What is the age of the new man?

(a) 72 years
(b) 75 years
(c) 74 years
(d) 73 years

Q2. The total weight of 12 boys and 8 girls is 1080 kg. If the average weight of boys is 50 kg, then what will be average weight of girls?

(a) 55 kg
(b) 50 kg
(c) 60 kg
(d) 45 kg

Q3. The average age of 25 men is 28 years. 5 new men of an average age of 25 years joined them. Find the average age of all the men together.

(a) 26.5 years
(b) 28.5 years
(c) 29.5 years
(d) 27.5 years

Q4. If the average of 35 numbers is 22, the average of the first 17 numbers is 19, and the average of the last 17 numbers is 20, then the 18^{th} number is

(a) 132
(b) 108
(c) 133
(d) 107

Q5. The average of the ages of a group of 65 men is 32 years. If 5 men join the group, the average of the ages of 70 men is 34 years. Then the average of the ages of those 5 men joined later (in years) is:

(a) 60
(b) 65
(c) 55
(d) 50

Q6. The average temperature for Monday, Wednesday and Friday was 41°C. The average for Wednesday, Friday and Thursday was 42°C. If the temperature on Thursday was 43°C, then the temperature on Monday was:
(a) 41°C
(b) 42°C
(c) 43°C
(d) 40°C

Q7. The average age of 40 students of a class is 16 years. After admission of 10 new students to the class, the average becomes 15 years. If the average age of 5 of the new students is 11 years, then the average age (in years) of the remaining 5 new students is:
(a) 11
(b) 16
(c) 15
(d) 10

TYPE 3

Q1. In a class, the average age of 40 students is 12 years when teacher's age is included to it, the average increases by 1. The age of teacher is :
(a) 53 years
(b) 51 years
(c) 48 years
(d) 68 years

Q2. If the mean of the observations x, x + 4, x + 5, x + 7, x + 9 is 9, then the mean of the last three observations is:
(a) 7
(b) 10
(c) 11
(d) 8

Q3. Average of 'n' observations is 38, average of 'n' other observations is 42 and average of remaining 'n' observations is 55. Average of all the observations is
(a) 45
(b) 35
(c) 55
(d) 40

Q4. Given that the mean of five numbers is 28. If one of them is excluded, the mean gets reduced by 5. Determine the excluded number.
(a) 46
(b) 47
(c) 45
(d) 48

Q5. The average weight of students in a class is 49kg. Five new students are admitted in the class whose weights are 45 kg, 46.8 kg, 47.4 kg, 54.2 kg and 63.6 kg. Now, the average weight of all the students in the class is 50 kg. The number of students in the class in the beginning was:
(a) 10
(b) 12
(c) 8
(d) 7

Q6. The average monthly salary of five friends is Rs. 62,000. Surinder, one of the five friends, got promotion and a hike in the salary. If the new average of their salaries is Rs. 64, 250, then how much is the increase in the monthly salary of Surinder?
(a) Rs. 14,250
(b) Rs. 11,250
(c) Rs. 73,250
(d) Rs. 12,150

Q7. There are 3 students in a group. If the weight of any student is added to the average weight of the other two the sums received are 48 kg, 52 kg, and 59 kg. The average weight (in kg) of the three students is:
(a) 27
(b) 26.5
(c) 27.5
(d) 28

Q8. A library has an average of 265 visitors on Sundays and 130 visitors on other days. The average number of visitors per day in a month of 30 days beginning with a Monday is:
(a) 135
(b) 165
(c) 148
(d) 129

Q9. The average of marks obtained by 120 candidates in a certain examination is 35. If the average marks obtained by passed candidates are 39 and those of the failed candidates are 15, what is the number of candidates who passed the examination?
(a) 100
(b) 120
(c) 150
(d) 140

TYPE 4

Q1. The average marks of Ravi in five subjects are 150, but in mathematics 43 was misread as 23 during the calculation. The correct average is:
(a) 154
(b) 150
(c) 160
(d) 148

Q2. The average of first 10 prime number is:
(a) 13.1
(b) 12.7
(c) 12.9
(d) 15.1

Q3. The average price of three items is Rs. 14,265. If their prices are in the ratio 7 : 9 : 11, then the price of the costliest item is:
(a) Rs. 19,875
(b) Rs. 16,235
(c) Rs. 14,875
(d) Rs. 17,435

Q4. The average of 16 numbers is 68.5 If two numbers 54 and 37 are replaced by 45 and 73 and one more number x is excluded, then the average of the numbers decreases by 1.5. The value of x is:
(a) 111
(b) 109
(c) 118
(d) 120

Q5. The average of a ten numbers is 72.8. The average of the first six numbers is 88.5 and the average of the last five numbers is 64.4. If the 6th number is excluded, then what is the average of the remaining numbers?
(a) 65.8
(b) 66.5
(c) 67
(d) 66

Q6. In a club there are 12 wrestlers. When a wrestler whose weight is 90 kg leaves the club, he is replaced by a new wrestler then the average weight of this 12 member club increases by 0.75 kg. What is the weight (in kg) of the new wrestler who joined the club?
(a) 108
(b) 99
(c) 112
(d) 100

Q7. The average weight of students in a class was 60.5 kg. When 8 students, whose average weight was 65 kg, joined the class, then the average weight of all the students increased by 0.9 kg. The total number of students now in the class is:
(a) 35
(b) 40
(c) 32
(d) 27

Q8. Out of five numbers A, B, C, D and E, the average of the first four numbers A, B, C and D is greater than the average of the last four numbers B, C, D and E by 35. Find the differences between A and E.
(a) 80
(b) 120
(c) 130
(d) 140

Q9. The average weight of A, B, and C is 55 kg. The weight of C is 10 kg more than A and 5 kg more than B. The average weight of A, B, C, and D, if D's weight is 19 kg more than C, is:
(a) 62 kg
(b) 61 kg
(c) 60 kg
(d) 58 kg

TYPE 5

Q1. In a company with 600 employees, the average age of the male employees is 42 years and that of the female employees is 41 years. If the average age of all the employees in the company is 41 years 9 months, then the number of female employees is:
(a) 150
(b) 450
(c) 350
(d) 250

Q2. In a set of three numbers, the average of the first two numbers is 7, the average of the last two numbers is 10, and the average of the first and the last numbers is 14. What is the average of the three numbers?
(a) 29/4
(b) 31/3
(c) 25/4
(d) 37/3

Q3. The average age of the Indian cricket team playing in the Cape town test match is 28 years. If the average

age of 10 players except the Captain is 27.8 years, then the age of the Captain is:
(a) 31 Years
(b) 26 Years
(c) 25 Years
(d) 30 Years

Q4. Find the average of (5 + 5 +_____upto 200 times) and (8 + 8 +_____upto 100 times).
(a) 6.5
(b) 7
(c) 6
(d) 75

Q5. In a class there are total 70 students. The average weight of 26 girls is 28 kg and average weight of the remaining students is 35 kg. What will be the average weight (in kg) of all 70 students?
(a) 32.4 kg
(b) 36.8 kg
(c) 35.2 kg
(d) 34.6 kg

Q6. The average score of 40 students of section A is 92. Two students of the class having average score 95, moved to another section and 2 new students replaced them. Now the average score of section A is 90. What is the average score of the students who joined section A?
(a) 89
(b) 86
(c) 91
(d) 55

Q7. The average weight of the students in a group was 75.4 kg. Later on, four students having weights 72.9 kg, 73.8 kg, 78.5 kg and 88.4 kg respectively, joined the group. As a result, the average weight of all the students in the group increased by 0.24 kg. What was the number of students in the group initially?
(a) 46
(b) 48
(c) 50
(d) 51

Q8. In a class of 45 students, the ratio of the number of boys and girls is 4 : 5. The average score of boys in mathematics is 78. If the average score of all the students in the class in mathematics is 76, then what is the average score of girls in mathematics?
(a) 73.6
(b) 71.8
(c) 72.4
(d) 74.4

Q9. In a class, the number of boys is 40% more than the number of girls. The average score in mathematics of all the students in the class is 55. If the average score of girls is 35% more than that of boys, then what is the average score in mathematics of girls?
(a) 64
(b) 62.4
(c) 60
(d) 64.8

Q10. The average of twelve numbers is 39. The average of the last five numbers is 35, and that of the first four numbers is 40. The fifth number is 6 less than the sixth number and 5 more than the seventh number. The average of the sixth and seventh numbers is:
(a) 47.5
(b) 50
(c) 44.5
(d) 39

Q11. The average of six numbers N_1, N_2, N_3, N_4, N_5, and N_6 is A. 5 is subtracted from each number. What is the new average?
(a) A - 30
(b) A - 10
(c) A - 6
(d) A - 5

Q12. If the average of five observations a_1, a_2, a_3, a_4 and a_5 is N, then what is the average of five new observations $a_1 - 100$, $a_2 - 100$, $a_3 - 100$, $a_4 - 100$, and $a_5 - 100$
(a) N - 20
(b) N - 100
(c) N - 40
(d) N -150

Q13. The average monthly expenditure of a family is ₹ 8160 for the first 2 months, ₹ 12780 for the next 5 months and ₹ 14280 for the last 5 months. If the family saves ₹ 66300 in the whole year, then what will be the average monthly income of the family?
(a) ₹18000
(b) ₹18160
(c) ₹18100

(d) ₹18260

Q14. The average (arithmetic mean) of 3^{30} , 3^{60} and 3^{90} is

(a) $3^{27} + 3^{57} + 3^{87}$
(b) 3^{60}
(c) $3^{29} + 3^{59} + 3^{89}$
(d) 3^{177}

Q15. In an examination average marks obtained by the girls of a class is 85 and the average marks obtained by the boys of the same class is 87. If the girls and boys are in the ratio 4 : 5, average marks of the whole class (approximately) is closest to

(a) 85.9
(b) 86.1
(c) 86.4
(d) 86.5

Q.16. A librarian purchased 60 story books for his library. But he found that he could get 4 extra books by spending Rs. 336 more and then the overall average price per book would be reduced by Re 1. The previous average price of each book was

(a) Rs. 84
(b) Rs. 83
(c) Rs. 68
(d) Rs. 100

NUMBER SYSTEM PART I

➢ BAR

Eg. $.\overline{2}$ = .2222222……

2/9 = ?? = 0.22222

$.\overline{2} = \frac{p}{q}$ =?? Convert bar into fraction

TYPE – 1

1. $.\overline{56}$
2. $.\overline{78}$
3. $.\overline{09}$

TYPE- 2

1. $.3\overline{2}$
2. $.5\overline{3}$
3. $.4\overline{78}$
4. $.12\overline{34}$

TYPE -3

1. $2.\overline{3}$
2. $76.\overline{58}$
3. $9.\overline{31}$

TYPE – 4

1. $.\overline{1} + 1.\overline{2}$
2. $.\overline{8} + .\overline{3}$
3. $.34\overline{67} + .13\overline{3}$

TYPE 5

1. $1^2 + 2^2 + 3^2 + \ldots\ldots\ldots\ldots n^2$
2. $1^2 + 2^2 + 3^2 + \ldots\ldots\ldots\ldots 20^2$
3. $1^2 + 2^2 + 3^2 + \ldots\ldots\ldots\ldots 30^2$
4. $11^2 + 12^2 + 13^2 \ldots\ldots 20^2$
5. $15^2 + 16^2 + \ldots\ldots\ldots\ldots 25^2$

FORMULA ⬇

$$\frac{n(n+1)(2n+1)}{6}$$

Even no Square

1. $2^2 + 4^2 + 6^2 + \ldots\ldots\ldots 10^2$
2. $2^2 + 4^2 + 6^2 + \ldots\ldots\ldots 20^2$
3. $4^2 + 8^2 + 12^2 + \ldots\ldots 40^2$

Odd no Square

1. $3^2 + 6^2 + 9^2 + \ldots\ldots\ldots 30^2$
2. $1^2 + 3^2 + 5^2 + \ldots\ldots\ldots 11^2$
3. $1^2 + 3^2 + 5^2 + \ldots\ldots\ldots 21^2$

TYPE 5

1. $1^2 - 2^2 + 3^2 - 4^2 + 5^2 - 6^2 \ldots\ldots 11^2$
2. $1^2 - 2^2 + 3^2 - 4^2 + 5^2 - 6^2 \ldots\ldots 20^2$
3. $1^2 - 2^2 + 3^2 - 4^2 + 5^2 - 6^2 \ldots\ldots 17^2$

Sum of Cube of 1st n Natural Number

Eg. $1^3 + 2^3 + 3^3 + \ldots\ldots\ldots\ldots n^3$

FORMULA ⬇

$$\left[\frac{n(n+1)}{2}\right]^2$$

1. $1^3 + 2^3 + 3^3 + \ldots\ldots\ldots\ldots 10^3$
2. $1^3 + 2^3 + 3^3 + \ldots\ldots\ldots\ldots 15^3$
3. $2^3 + 4^3 + 6^3 + \ldots\ldots\ldots\ldots 20^3$
4. $2^3 + 4^3 + 6^3 + \ldots\ldots\ldots\ldots 30^3$

5. $4^3+8^3+12^3+\ldots\ldots\ldots\ldots 40^3$

TYPE 6

1. $\frac{1+1}{n}+\frac{1+2}{n}+\frac{1+3}{n}+\frac{1+4}{n}+\cdots\frac{1+n}{n}$
2. $\frac{1+1^2}{n}+\frac{2+2^2}{n}+\frac{3+3^2}{n}+\ldots\ldots\ldots\ldots\ldots\frac{n+n^2}{n}$

TYPE 7

1. $\sqrt[6]{4096}+\sqrt[4]{4096}+\sqrt[3]{4096}+\sqrt{4096}$
2. Explain the value of 'X' where X= $\sqrt{a\sqrt{a}\sqrt{a}\ldots\infty}$
3. $\sqrt{3\sqrt{3}\sqrt{3}\ldots\infty}$
4. $if\ x=\sqrt{4\sqrt{4}\sqrt{4}\ldots\infty}\ then\ what\ is\ the\ value\ of\ x$
5. if x= $\sqrt{a\div\sqrt{a}\div\sqrt{a}\div\ldots\infty}$ THEN find X?
6. $\sqrt{27\div\sqrt{27}\div\sqrt{27}\div\ldots\infty}$
7. IF $\sqrt{7\sqrt{7\sqrt{7\sqrt{7\sqrt{7\sqrt{7}}}}}}$
8. $\sqrt{2\sqrt{2\sqrt{2\sqrt{2\sqrt{2\sqrt{2}}}}}}$

TYPE 8 (Find Unit Digit)

1. $1^2+2^2+3^2+\ldots\ldots\ldots\ldots 10^2$
2. $1^3+2^3+3^3+\ldots\ldots\ldots\ldots 10^3$
3. 1! + 2! + 3! + 4!.....99!
4. 1! + 2! + 3! + 4!.....9999!
5. $1\frac{1}{2}+11\frac{1}{2}+111\frac{1}{2}+1111\frac{1}{2}$
6. $3\frac{1}{3}+33\frac{1}{3}+333\frac{1}{3}+3333\frac{1}{3}+33333\frac{1}{3}+333333\frac{1}{3}$
7. $3\frac{1}{3}+33\frac{1}{3}+333\frac{1}{3}+3333\frac{1}{3}+333333333\frac{1}{3}$

LCM / HCF

Find LCM and HCF of the following

1. 10,15,20
2. $\frac{a}{p},\frac{b}{q},\frac{c}{r}$
3. $\frac{3}{2},\frac{6}{5},\frac{12}{5}$
4. $\frac{3}{2},\frac{1}{3},\frac{4}{3}$
5. 0.5, 0.01, 0.125
6. 0.3,0.06,0.243

LCM & HCF in polynomials

1. X^2, X^3, X^4
2. xy^2, x^2y^2, x^3y^3
3. $x^2y^3z^5, xy^5z^3, x^2y^7z$
4. $4xy, 2x^2y, 6x^2y^3$

HCF & LCM in Algebraic Form

1. $(x^6-1), (x^4+2x^3-2x-1)$
2. $(x^2+1)(x^2-1), (x+1)(x^2-2x+1), (x-1)(x^3+1+3x^2+3x)$

TYPE 9

1. $\sqrt{5+\sqrt{5+\sqrt{5+\ldots\infty}}}$
2. $\sqrt{1-\sqrt{1-\sqrt{1-\ldots\infty}}}$

AN IMPORTANT RESULT

A). $\boldsymbol{X=\sqrt{a+b\sqrt{a+b\sqrt{a+\ldots\infty}}}}$

$$\boldsymbol{=x=\frac{\sqrt{4a+b^2}+b}{2}}$$

B). $\boldsymbol{Y=\sqrt{a-b\sqrt{a-b\sqrt{a-\ldots\infty}}}}$

$$\boldsymbol{=Y=\frac{\sqrt{4a+b^2}-b}{2}}$$

1. $\sqrt{35+2\sqrt{35+2\sqrt{35+2\sqrt{35+2\ldots\infty}}}}$
2. $\sqrt{154-3\sqrt{154-3\sqrt{154-3\sqrt{154-3\ldots\infty}}}}$
3. IF P= $\sqrt{11+3\sqrt{11+3\sqrt{11+3\sqrt{11+3\ldots\infty}}}}$
4. Q= $\sqrt{11-3\sqrt{11-3\sqrt{11-3\sqrt{11-3\ldots\infty}}}}$

THEN P + Q??

AN IMPORTANT RESULT

- $X = \sqrt{a + b\sqrt{a - b}\sqrt{a + \ldots \infty}}$

  $= x = \frac{\sqrt{4a - 3b^2} + b}{2}$

- $Y = \sqrt{a - b\sqrt{a + b}\sqrt{a - \ldots \infty}}$

  $= Y = \frac{\sqrt{4a - 3b^2} - b}{2}$

1. $IF\ X = \sqrt{7 + 2\sqrt{7 - 2\sqrt{7 + 2\sqrt{7 - 2} \ldots \infty}}}$
2. $IF\ X =$
   $\sqrt{13 - 3\sqrt{13 + 3\sqrt{13 - 3\sqrt{13 + 3} \ldots \infty}}}$

TYPE 10

FIND THE GREATEST AMONG ALL

1. $\sqrt[3]{5}, \sqrt[4]{7}, \sqrt{3}$
2. $\sqrt[3]{6}, \sqrt[4]{4}, \sqrt[6]{6}, \sqrt[12]{12}$
3. $\sqrt[8]{8}, \sqrt[12]{12}, \sqrt[6]{6}$
4. $2^{50}, 4^{40}$
5. $2^{40}, 5^{20}$
6. $\frac{1}{12}, \frac{2}{3}, \frac{3}{4}, \frac{5}{6}$
7. $\frac{5}{7}, \frac{8}{14}, \frac{18}{28}$

TYPE 11

1. $\sqrt{2\sqrt{4\sqrt{8}}}$
2. $\sqrt{2\sqrt{4\sqrt{8\sqrt{16}}}}$
3. $\sqrt{3\sqrt{9\sqrt{27\sqrt{81}}}}$
4. $\sqrt[3]{2\sqrt[3]{2}}$
5. $\sqrt[3]{5\sqrt[3]{5\sqrt[3]{5}}}$
6. $x^{(a-b)c} \times x^{(b-c)a} \times x^{(c-a)b}$

NUMBER SYSTEM PART 2

TYPE 1

POWER BASED QUESTIONS

FIND UNIT DIGIT

Q.1) $36^{44^{50^{53}}}$

Q.2) 100^{98}

Q.3) 108^{105}

Q.4) 109^{102}

TYPE 2

Q.1) 100^{100}

Q.2) 444^{100}

Q.3) 777^{200}

Q.4) 44^{108}

TYPE 3

Q.1) $4^1 \times 9^2 \times 4^3 \times 9^4 \times 4^5 \times 9^6 \ldots\ldots 4^{99} \times 9^{100}$

Q.2) $4^1 + 9^2 + 4^3 + 9^4 + 4^5 + 9^6 \ldots\ldots 4^{99} + 9^{100}$

Q.3) $1!^1 + 2!^2 + 3!^3 + 4!^4 + 5!^5 \ldots\ldots 100!^{100}$

Q.4) $1!^1 + 2!^2 + 3!^3 + 4!^4 + 5!^5 \ldots\ldots 50!^{50}$

Q.5) $1!^{100} + 2!^{99} + 3!^{97} + \ldots\ldots 100!^1$

Q.6) $1!^{1!} + 2!^{2!} + 3!^{3!} + 4!^{4!} + 5!^{5!} \ldots\ldots 100!^{100!}$

Q.7) IF A= 1^2 , B= 2^3 , C=3^4 …… Z= 26^{27}

FIND UNIT DIGIT OF A × B × C ……Z

Q.8) WHICH AMONG THE FOLLOWING IS THE LARGEST

$\sqrt{11} + \sqrt{5}$, $\sqrt{14} + \sqrt{2}$, $\sqrt{8} + \sqrt{8}$

Q.9) WHICH AMONG THE FOLLOWING IS THE SMALLEST

$\sqrt{10} + \sqrt{4}$, $\sqrt{11} + \sqrt{3}$, $\sqrt{7} + \sqrt{7}$

Q.10) CHOOSE THE CORRECT OPTION BETWEEN THE GIVEN OPTION

$\sqrt{6} + \sqrt{2} = \sqrt{5} + \sqrt{3}$
$\sqrt{6} + \sqrt{2} < \sqrt{5} + \sqrt{3}$
$\sqrt{6} + \sqrt{2} > \sqrt{5} + \sqrt{3}$

Q.11) THE GREATEST AMONG IS $\sqrt{7} - \sqrt{5}$, $\sqrt{5} - \sqrt{3}$, $\sqrt{11} - \sqrt{9}$, $\sqrt{9} - \sqrt{7}$

Q.12) THE GREATEST AMONG IS $\sqrt{19} - \sqrt{17}$, $\sqrt{13} - \sqrt{11}$, $\sqrt{7} - \sqrt{5}$, $\sqrt{5} - \sqrt{3}$

Q.13) THE GREATEST AMONG IS $\sqrt{6} + \sqrt{4}$, $\sqrt{8} + \sqrt{3}$, $\sqrt{12} + \sqrt{2}$, $\sqrt{24} + \sqrt{1}$

Q.14) $\frac{1}{\sqrt{2}+1} + \frac{1}{\sqrt{3}+\sqrt{2}} + \frac{1}{\sqrt{4}+\sqrt{3}} + \ldots.. + \frac{1}{\sqrt{100}+\sqrt{99}}$

Q.15) $\frac{1}{\sqrt{3}+\sqrt{4}} + \frac{1}{\sqrt{4}+\sqrt{5}} + \frac{1}{\sqrt{5}+\sqrt{6}} + \frac{1}{\sqrt{6}+\sqrt{7}}$

Q.16) if unit digit of 3333^n is 7

Find the unit digit of 7777^n

Q.17) $259^{22^{45}}$

Q.18) $334^{22^{45}}$

Q.19) Find unit digit of $7^{3^{4n}} + 1$ (if n is any natural number)

TYPE 4

Q.1) $48^{101} - 32^{80}$

Q.2) $32^{800} - 18^{101}$

Q.3) $633^{24} - 277^{38} + 266^{54}$

Q.4) Which of the following can't be unit digit of a perfect square?

Q.5) If a no. of 2 digits, unit digit is twice the ten's digit. IF 36 added to the no. the digit are reversed the no. is?

Q.6) $1^4+2^4+3^4+.....75^4$

Q.7) Find unit digit of $111^{111} \times 666^{666} \times 555^{555}$

Q.8) find the unit digit of $4727^{2345678921}$

Q.9) $2^{3^4} \times 3^{4^5} \times 5^{6^7} \times 6^{7^8} \times 7^{8^9} \times 8^{9^{10}} \times 9^{10^{11}}$

Q.10) $0.\overline{32} = 684$

Q.11) Find the sq. root of $.\overline{4}$

Q.12) Find the cube root of $.\overline{03}$

Q.13) $.\overline{xy} = \frac{7}{11}$ $find\ x^2 + y^2$

TYPE 5

Odd series = N^2

Q.1) Find the sum of 1st 10 odd no.?

Q.2) Find the sum of 1st 20 odd no.?

Q.3) Find the sum of all odd no. up to 100?

Q.4) Find the sum of all odd no. from 10 to 20?

Q.5) Find the sum of all odd no. from 50 to 100?

Even Series = n(n+1)

Q.6) Find the sum of 1st 50 even no.?

Q.7) Find the sum of 1st 20 even no. ?

Q.8) Find the sum b/w (50 to 100)

TYPE 6

Q.1) $6^2 + 7^2 + 8^2 + ...15^2$

Q.2) $10^2 + 11^2 + ...20^2$

Q.3) $3^2 + 6^2 + 9^2 + ...30^2$

TYPE 7

Q.1) $\sqrt{1+\frac{1}{1^2}+\frac{1}{2^2}} + \sqrt{1+\frac{1}{2^2}+\frac{1}{3^2}} + \sqrt{1+\frac{1}{3^2}+\frac{1}{4^2}} + ...\sqrt{1+\frac{1}{2007^2}+\frac{1}{2008^2}}$

Q.2) $\sqrt{1+\frac{1}{1^2}+\frac{1}{2^2}} + \sqrt{1+\frac{1}{2^2}+\frac{1}{3^2}} + \sqrt{1+\frac{1}{3^2}+\frac{1}{4^2}} + ...\sqrt{1+\frac{1}{2020^2}+\frac{1}{2021^2}}$

Divisibility Question

Q.1) Find out the remainder when 234567 is divided by 11?

Q.2) Find out remainder in each case when 123456789 is divided by 7 and 13 respectively?

Q.3) 97215*x*6 is completely divisible by 11, then find out the smallest no. in place of *x* will be?

Q.4) 91876*x2 is completely divisible by 8 , the smallest no. in place of x will be ?*

Q.5) 653 *xy* is completely divisible by 80, find $x + y$?

No. of prime divisors

Q.6) $2^{30}\times3^{20}\times2^{10}\times6^{10}$

Q.7) $2^{30}\times2^{20}\times6^{10}$

Q.8) $2^{30}\times3^{20}\times2^{10}\times6^{10}$

Q.9) If 50! Is completely divided by 3^n, then find N?

Q.10) If 100 ! is completely divided by 7^n , then find n?

TYPE 8

Successive remainder

Q.1) When a number 7550 is divided by a two digit no. the consecutive numbers remainders are 3,11,14 respectively, find the two digit number?

Q.2) When 64329 is divided by a certain number its consecutive remainders are 175, 114 and 213. Find the number?

Q.3) When 456753 is divided by a certain number gives remainder 44, 35 and 51. Find the sum of digits of the divisor?

Q.4) 325678 is divided by a number then there are 3 consecutive remainders 196,437,553. Find the dividend?

Q.5) 525 is divided by a number such that its consecutive remainders are 4 and 9. What is the number?

Q.6) If 83 is divided successively by 7,3,2 then what are remainders ?

Q.7) The smallest number when divided by 7,2,4 leaves remainder 6,1 and 2 respectively. If the same number is divided by 5. What is the remainder?

Q.8) A natural number is divided by 3, 5 and 6 leaves remainder 2,2 and 3. If change the sequence of divisor what is the order of remainders?

NUMBER SYSTEM – PART 3

Q.1) What is the sum of divisions of 8?

Q.2) What is the sum of divisions of 12?

Q.3) What is the sum of divisions of 256?

TYPE 1

FORMULA ⟶ $L/t_n = a+(n-1)d$

Q.1) Find 1,3,5,7…….10^{th} term ?

Q.2) 2,4,6…… find the 100^{th} term?

Q.3) 5,9,13….. find the 20^{th} term?

Q.4) 5,8,11……..200. find the number of terms ?

Q.5) 5,10,15……500 find the number of terms ?

TYPE 2

Q.1) In an AP series 11^{th} term is 37 and 19^{th} term is 67. Find the 15^{th} term?

Q.2) In an AP series 9^{th} term is 17 and 19^{th} term is 23. Find the 29^{th} term?

Q.3) In an AP series 5^{th} & 18^{th} term sum is equal to 7^{th} ,12^{th} , 17^{th} term sum. Find out the term having zero in it?

Q.4) 5,-2,-9,-16,-23…….. find 10^{th} term?

Q.5) If AP_1 = 1,4,7,10,13,16,19,22,25……..till 40 terms

AP_2 = 5,9,13,17,21,25….. till 30 terms

How many term are common in both AP series?

TYPE 3

Average in series

- $\frac{1st+l}{2}$
- **S_n= n×avg.**

Q.1) 1+2+3……100 find average of?

Q.2) 2+4+6…..100 find average of?

Q.3) If the sum of first 25 numbers of an AP is 300, find the 13^{th} term?

Q.4) If S_{27}= 320 find T_{14}?

Q.5) 23, 19,15……. Find 15^{th} , 12^{th}, 20^{th} term?

Q.6) Find the sum of 1^{st} 29 terms of series 23,19,15,11……..?

Number of zero

TYPE 1

Q.1) 10×15×20×25×30

Q.2) 1×2×3×4×5……..100

Q.3) 1×2×3×4….50

Q.4) 51×52×53×……..100

Q.5) 11×12×13…….50

Q.6) 61×62×63……100

Q.7) 10×20×…….5000

Q.8) 50! ×100!

Q.9) 50! ×100! ×200!

Q.10) 50!+100!

Q.11) 10!+20!

Q.12) 100!+200!

TYPE 2

Q.1) 100! ÷ 50!

Q.2) 150! ÷ 50!

Q.3) If a=1^2, B= 2^3 , C=3^4…….Z=26^{27}

FIND THE NUMBER OF ZERO IN A×B×C…….Z

Q. 4) If a=1^3, B= 2^4 , C=3^5…….Z=26^{28}

FIND THE NUMBER OF ZERO IN A×B×C…….Z

Q.5) $5^7\times10^{12}\times15^{17}\times20^{22}\times25^{27}$

Q.6) $1^1\times2^2\times3^3\times4^4$…….$10^{10}$

Q.7) $1^1\times2^2\times3^3\times4^4$…….$30^{30}$

Q.8) $1^2\times2^2\times3^2\times4^2$…….$10^2$

TYPE 3

Q.1) $(3^{123} - 3^{122} - 3^{121}) \times (2^{121} - 2^{120} - 3^{119})$

Q.2) $(8^{123} - 8^{122} - 8^{121}) \times (3^{67} - 3^{66} - 3^{65})$

$$\frac{N^{P-1}}{P}$$

"P" SHOULD BE A PRIME NUMBER

Q.3) $\frac{16^{22}}{23}$ FIND REMAINDER OF?

Q.4) $\frac{5^{41}}{11}$ FIND REMAINDER OF?

Q.5) $\frac{19^{89}}{23}$ FIND REMAINDER OF?

Q.6) FIND REMAINDER OF $\frac{73\times37\times53\times39\times13\times1352\times1212}{5}$?

Q.7) FIND REMAINDER OF $\frac{1!+2!+3!+\cdots....100!}{3}$

Q.8) FIND REMAINDER OF $\frac{1!+2!+3!+\cdots....999!}{5}$

Q.9) FIND REMAINDER OF $\frac{1!+2!+3!+\cdots....500!}{10}$

Q.10) 2222222…….(100TIMES) ÷7 FIND THE REMAINDER

Q.11) $\frac{333^{335}+5}{334}$ R=??

Q.12) $\frac{333^{335}-5}{334}$ R=??

Q.13) $\frac{85^{100}}{9}$

Q.14) A rubber ball is thrown up and it reaches up at a height of 120m. on each bounce, it bounce back $\frac{2}{3}$ of earlier height. Find the total distance covered by the ball till it comes to rest?

TYPE 4

Q.1). $\frac{28+13+28+24}{9}$ FIND REMAINDER?

Q.2) $\frac{1^2+11^2+111^2+\cdots.....25TIMES}{9}$ FIND R=?

Q.3) $\frac{4^2+44^2+444^2+\cdots.....20TIMES}{9}$ FIND R=?

Q.4) How many 3 digit no. are possible from (0,3,4,9)

Q.5) How many 100 digit positive number are possible from 0,1,2……9 ??

Q.5) How many 4 digit even no. are possible from (2,3,4,9)

Q.6) $\sqrt{11111111\ldots100\ times - 22222\ldots50\ times}$

PROBABILITY

Experiment – An operation can produced some well - defined outcomes.

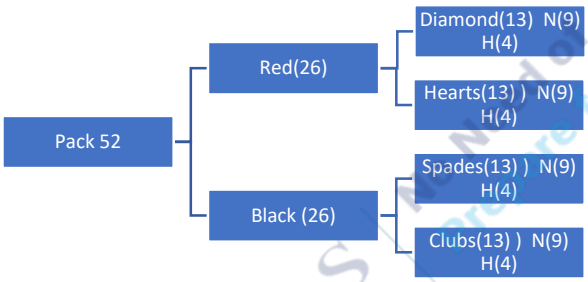
Random experiment - An experiment in which all possible outcomes are known and the exact can't be predicted in advance- tossing coin, rolling dice

Eg. When we throw a coin then either a head or a tail appears. **Or** a dice is a solid cube having 6 faces marked

1,2,3,4,5,6 – When we throw a dice the outcome is that number appear on it upper face.

×××- **A** pack of cards has 52 cards.

a) **It has 13 cards of each suit, as Spades, Clubs, Hearts & Diamonds**
b) **Cards of spades and clubs are Black Cards**
c) **Cards of hearts and Diamonds are Red cards. They are four house of each suit, these are Aces, Kings, Queens and Jacks, these are called face cards.**



N = 2,3,4,5,6,7,8,9,10 **H= J,Q,K,A**

Sample Space - When we perform all experiment then the set 'S' of all possible outcomes is called the sample space.

In tossing coin = S= (H,T)

Two coins – S=(HH,HT,TH,TT)

In rolling Dice - (1,2,3,4,5,6)

Event- Any subset of a sample space is called event.

Eg- In tossing coin then comes Tail it is an event

Probability – Used to measure the "chance" factor that occurs in the type of experiments.

Definition- If a random experiment has **P**-possible elementary outcomes of which say **Q** are favourable for an event E then the probability of occurrence of **'E'**

$$P(E)\ \frac{number\ of\ favourable\ cases}{total\ number\ of\ cases} = \frac{m}{n}$$

Probability of an sure event is 1

Eg. Probability of an impossible event is '0'

On rolling of dice probability of coming **7** is not possible.

Simple or Elementary event- single subset of sample space

Compound event – joint occurrence of two or more event.

Exhaustive events – when many conditions are given and are linked.

Mutually exclusive events- If two or more events have no point in common i.e. if they cannot occur simultaneously the events are said to be mutually exclusive.

Then probability of two events A&B is P(A)+P(B)

When Depended- P(A)×P(B)

Q. 1) When a coin and a die are thrown, the no of all possible cases is
(a) 7
(b) 8
(c) 12
(d) 0

Conditional Probability- A & B associated event to a random experiment.

Occurrence of A when B has already occurred

$P\left[\frac{A}{B}\right] = \frac{P(A \cap B)}{P(B)}$ **Similarly** $= P\left\{\frac{B}{A}\right\} = \frac{P(A \cap B)}{P(A)}$

$P(A \cup B) = P(A) + P(B) - P(A \cap B)$

Q. 2) The conditional probability of B given A is

(a) $\frac{P(A \cap B)}{P(B)}$
(b) $\frac{P(A \cup B)}{P(A)}$
(c) $\frac{P(A \cap B)}{P(A)}$
(d) $\frac{P(A \cup B)}{P(A)}$

Q.3) P(x) = 0.15 , p(y) = 0.25 P(x ∩ y) = 0.10

Then P($x \cup y$) =??

Q.4) P(A) = 0.5 , P(B) = 0.3 & the events A&B are independent then P(A∩ B) is
(a) 0.8
(b) 0.15
(c) 0.08
(d) 0.015

Q.5) If P(A) = 0.4 P(B)= 0.5 & P(A∩B)=0.2

Find P($\frac{B}{A}$)

Q.6) When a single die is thrown the event of getting odd number or even number are –
(a) mutually exclusive events
(b) not mutually exclusive events
(c) Independent events
(d) Dependent event

Q.7) If A and B are mutually exclusive events , P(AB) =??
(a) Zero
(b) P(A)+P(B)
(c) P(A)
(d) none of these

Q.8) If an event cannot take place, probability will be
(a) +1
(b)-1
(c) 0
(d) none of these

Q.9) If two events A&B are independent, the probability that will both occur is given by
(a) P(A) + P(B)
(b) P(A)×P(B)
(c) P(A) – P(B)
(d) P(A)+P(B)- P(AB)

NOTE - From selecting r From N no of the things

The combination is n_{C_r} C- Combination

Q.10) 5_{c_2} **is equal to**
(a) 20
(b) 30
(c) 10
(d)100

Q.11) If three cards are drawn from a pack of 52 cards, what is the chance that all will be queen?

Q.12) Two dice are thrown at a time. Find the probability of the following
(a) The no. shown are equal
(b) The difference of numbers shown is 1

Q. 13) A bag contains 6 white, 5 black & 4 red balls. Find the probability of getting either a white or a black ball in a single draw?

Q.14) One digit is selected from first 20 positive integers. What is the probability that it is divisible by 3 or 4?

Q.15) Two dice are thrown simultaneously. The probability of obtaining a total score of seven is
(a) 1/6
(b) 1/3
(c) 2/7
(d) 5/6

Q.16) Four balls are drawn at random from a bag containing 5 white, 4 green and 3 black balls. The probability that exactly two of them are white is?
(a) 14/33
(b)-14/33
(c) 10/33
(d) 19/33

Q.17) Two dice are tossed. The probability that the total score is prime number is

Q.18) Anil can kill a bird once in 3 shots. On the assumption that he fires 3 shots, find the probability that the bird is killed.
(a) 19/27
(b) 21/27
(c) 4/27
(d) 13/27

Q.19) The probability of getting head and tail alternately in three throws of a coin (or a throw of three coins) is
(a) 1/4
(b) 1/5
(c) 2/9
(d) none of these

Q.20) The probability of getting sum more than 7 when a pair of dice is thrown is
(a) 10/13
(b) 5/12
(c) 19/23
(d) 15/23

Q.21) The probability of throwing 16 in one throw with 3 dice is

Q.22) Of a total 600 bolts, 20% are too large and 10% are two small. The remainder are considered to be suitable. If a bolt is selected at random, the probability that it will be suitable is?

Q.23) The probability that in the toss of two dice we obtain the sum 7 or 11 is

Q.24) A card is drawn at random from a pack of 100 cards numbered 1 to 100. The probability of drawing a number which is a square is?

Q.25) If seven coins are tossed find the probability of getting no head?
(a) 1/128
(b) ½
(c) 1/63
(d) 1/64

Q.26) One bag contains 6 black and 8 white balls, one ball is drawn at random. What it is the probability that the ball drawn is white?

Q.27) In a box there are 8 red, 7 blue and 6 green balls. One is picked up randomly. What is the probability that if it is neither red nor green?

Q.28) A bag contains 2 red, 3 green and 2 blue balls. Three balls are drawn at random. What is the probability that none of the ball drawn is blue?

Q.29) A card is drawn from a pack of 52 cards. The probability of getting a queen of club or a king of heart is?

Q.30) In a class, there are 15 boys and 10 girls. Three students are selected at random. Find the probability that 1 girl and 2 boys are selected?
(a) 21/46
(b) 25/17
(c) 1/50
(d) 3/25

Q.31) What is the probability of getting a sum 9 from two throws of dice?
(a) 1/6
(b) 1/8
(c) 1/9
(d) 1/12

Q.32) An unbiased die is tossed, Find the probability of getting a multiple of 3?
(a) 1/3
(b) 2/3
(c) 1/6
(d) 1/12

Q.33) Man and his Wife appear in an interview for two vacancies in the same post. The probability of husband selection is 1/7 and probability of wife selection is 1/5. What is the probability that only one of them is selected?
(a) 2/7
(b) 1/13
(c) 10/33
(d) 1/19

Q.34) The probability of solving the specific problem independently by the persons' A and B are 1/2 and 1/3 respectively. In case, if both the persons try to solve the problem independently, then calculate the probability that the problem is solved.
(a) 2/3
(b) 1/3
(c) 1/9
(d) 5/

PERMUTATION AND COMBINATION

Permutation - Number of ways in which a set or a number of things can be put in an order or arranged.

Arrangement - Permutation gives it

$n_{p_r} = \frac{n!}{(n-r)!}$ Eg. 3_{p_2} Here 'P' stands for with arrangement

Combination(To choose)- only collect with arrangement(selection)

Eg. 5 balls select 3 balls 5_{c_3} = only selection, no arrangement

$n_{c_r} = \frac{n!}{r!(n-r)!}$

n!= 1×2×3×4×……(n-2)×(n-1)×n

0!= 1

and ⇒ (×) means condition continues

or ⇒ (+) condition case change

n_{p_n} = 1

##n_{p_1} = n

Conditions

- The number of permutation of N different articles taking 'R' at a time denoted by- n_{p_r}
- The number of permutation of N different articles taking all at a time - **n!**
- The number of permutation (arrangement) of N different articles taking 'R' at a time when article can be repeated any number of times - n^r
- **The** number of circular permutation (arrangement) of 'N' different articles **– (n-1)!**
- The number of circular arrangement of n different articles when clockwise & anticlockwise arrangement are not different

$$\frac{(n-1)!}{2}$$

Q. KESHAV

1. No. of arrangement
2. All words start with 'K'
3. Start with 'K' but ends with 'V'
4. All vowels together
5. All consonants together
6. All vowels & consonants all together

7. All vowels are never together
8. If all consonants are never together
9. The vowel occupy the even space
10. How many different ways can be letters of the word be re-arranged

Q.1) 5 boys 3 girls – How many ways seated in a row in such a way that there is no restriction

(a) All girls would be together
(b) All boys together and All girls together
(c) Girls – never sit together
(d) If all are sitting together then two women are not sitting together

Q.2) M , 4 W in a line -then

Men, Women are alternating total ways

Q. 3) 4 M 3 G Alternative to each one

Q.4) How many ways can 9 students seated in a circle?

Q.5) How many 3 digit number can be formed along with

0,1,2,3……9

(a) If repeat is not allowed
(b) If repeat allowed

Q.6) How many Number can be formed between 300 to 900 along with 0-9 digits. (If repeat is allowed)

Q.7) How many numbers can be formed between 400 to 4000 along with 0-9. (if repeat not allowed)

Q.8) How many four digits no; each divisible by 4 can be formed using the digits 1,2,3,4,5 (repeat is allowed)?

QUESTIONS (PERMUTATION & COMBINATION)

Q1. In how many ways can the letters of the word 'PHONE' be decorated?
(a) 60
(b) 24
(c) 120
(d) 72

Q2. In how many ways can the letters of the word 'PENCIL' be decorated?
(a) 360
(b) 720
(c) 540
(d) 1440

Q3. In how many ways can the letters of the word 'JOJO' be decorated?
(a) 6
(b) 12
(c) 24
(d) 18

Q4. In how many ways can the letters of the word 'NOTBOOK' be decorated?
(a) 840
(b) 1680
(c) 2520
(d) 420

Q5. There are 25 people in a party, and if each of them hugs with each other, how often do they hug?
(a) 275
(b) 300
(c) 250
(d) None of these

Q6. How many six- digits numbers can be made from 1,2,1,2,0,2?
(a) 100
(b) 50
(c) 60
(d) 120

Q7. How many different ways can 2 students be seated in a row of 4 desks, so that there is always at least one empty desk between the students?
(a) 4
(b) 3
(c) 2
(d) 6

Q8. In how many different ways can the letters of the word 'STORE' be arranged so that the vowels always come together?
(a) 24
(b) 48
(c) 72
(d) 120

Q9. In how many different ways can the letters of the word 'SAMSUNG' be arranged so that the vowels always come together?
(a) 240
(b) 360
(c) 720
(d) 540

Q10. In how many different ways can the letters of the word 'SAHIL' be arranged, so that the vowels never come together?
(a) 120
(b) 48
(c) 72
(d) 168

Q11. In how many ways can the letters of the word "MOUSE" be arranged, so that the vowels are at the two ends?
(a) 12
(b) 18
(c) 36
(d) 48

Q12. How many different words with two letters can be formed by using the letters of the word JUNGLE, each containing one vowel and one consonant?
(a) 8
(b) 12
(c) 16
(d) None of these

Q13. In how many ways can a committee of 6 people be chosen out of 10 people?

(a) 105
(b) 420
(c) 210
(d) 280

Q14. In how many ways a committee consisting of 5 men and 6 women can be formed from can be formed from 8 men and 10 women?
(a) 5880
(b) 5040
(c) 11760
(d) 23520

Q15. A committee of 5 members is to be formed by selecting out 4 men and 5 women. In how many different ways the committee can be formed if it should have 2 men and 3 women?
(a) 20
(b) 30
(c) 40
(d) 60

Q16. A box contains 6 white balls, 5 black balls and 7 red balls. In how many ways can 3 balls be drawn from the box, if at least one white ball?
(a) 396
(b) 447
(c) 576
(d) 596

Q17. There are 20 people in a party. If each of them shakes hands with each other, then how many handshakes are there in the party?
(a) 171
(b) 153
(c) 190
(d) 180

Q18. There are total 25 students in a class. On new year, every student sends cards to all the students, then tell how many total cards were sent-
(a) 625
(b) 500
(c) 300
(d) 600

Q19. In how many ways can the letters of the word 'DIRECTOR' be arranged so that the three vowels are never together?
(a) 20160
(b) 2160
(c) 18000
(d) 15600

Q20. In how many different ways can the letters of the word 'THERAPY' be arranged, so that the vowels never come together?
(a) 1800
(b) 1440
(c) 720
(d) 3600

Q21. In how many different ways can the letters of the word 'SOFTWARE' be arranged so that the vowels always come together?
(a) 1440
(b) 4320
(c) 2160
(d) 8640

Q22. In how many different ways can the letters of the word 'UNIVERSITY' be arranged so that the vowels always come together?
(a) 30240
(b) 120960
(c) 90720
(d) 60480

Q23. In how many ways 5 boys and 4 girls can be seated in a row, so that no two girls are together?
(a) 2880
(b) 14400
(c) 21600
(d) 43200

Q24. 5 men and 4 women are to be seated in a row so that the women occupy the even places. How many such arrangements are possible?
(a) 1440
(b) 2880
(c) 5760
(d) 720

Q25. A box contains 2 white, 3 black and 4 red balls. In how many ways can 3 balls be drawn from the box, if at least 1 black ball?
(a) 32
(b) 48

(c) 64
(d) 96

Q26. In a chess tournament, 4 matches were played. How their results can be declared?
(a) 81
(b) 9
(c) 243
(d) 27

Q27. How many three-digit numbers can be made from 1,3,5,7,9, if the digits are not repeated
(a) 50
(b) 60
(c) 40
(d) 70

Q28. If $^{n}C_{10} = {}^{n}C_{15}$, then $^{27}C_{n}$ is equal to
(a) 702
(b) 351
(c) 729
(d) 243

Q29. Let A and B be two sets having 2 elements and 4 elements respectively. The number of subsets of A × B which have 3 or more elements is
(a) 256
(b) 220
(c) 219
(d) 211

Q30. Let T_n be the number of all possible triangles that can be formed by joining vertices of a regular polygon of n sides. IF $T_{n+1} - T_n = 10$, then the value of n is
(a) 7
(b) 5
(c) 10
(d) 8

CODING DECODING

TYPE- 1

Q.1) If EARTH is written as FCUXM in a certain code. How is MOON written in that code?

Q.2) If DELHI is written as EDMGJ in a certain code. How is NEPAL written in that code?

Q.3) If SYMBOL is written as NZTMPC is it a certain code? How is NUMBER written in that code?

Q.4) In a certain code, COMPUTER is written as PMOCRETU, how is DECIPHER written in that code?

Q.5) If SYSTEM is coded as SYSMET and NEARER as AENRER, then FRACTION will be coded as

Q.6) In a certain code, CAT is written as SATC and DEAR is written as SEARD. How would SING be written in that code?

Q.7) If the word "RED" is coded "UHG", then what is the code for "NOT"?

Q.8) In a certain code, LUTE is written as MUTE and GATE is written as HATE, then how BLUE will be written as?

TYPE-2

Q.1) In a certain code, NEWYORK is written as 111, how is NEWJERSEY written in that code?

Q.2) In a certain code, HARYANA is written as 8197151, how is DELHI written in that code?

Q. In a certain code BOMB is written as 5745 and BAY is written as 529, how is BOMBAY written in that code?

Q.4) If the word "STOOD" is coded as "192015154", then what will "HELP" be coded as?

TYPE 3

Q.1) Below are given letters and their numeric codes. Below that are given some conditions to be followed while codifying the given letter groups in each question. Study them and find out the correct numeric coded form of the given letter group in each question. If none of the coded forms is correct, your answer will be|i.e, 'None of these'.

Digits	2	5	7	8	9	4	6	3	1
Code	M	R	T	B	W	K	D	N	J

Conditions:

i. If the first and last numbers are odd digits, both are to be coded as I.
ii. If the first and last numbers are even digits, both are to be coded as Y.

1) 263847

(a) IDNBKY
(b) IDNBKI
(c) MDNBKY
(d) YDNBKY
(e) None of these

2) 615824

(a) JRBMY
(b) IJRBMI
(c) IJRBMK
(d) IJRBMY
(e) None of these

3) 591248

(a) YWJMKY
(b) IWJMKB
(c) RWJMKB
(d) RWJMKY
(e) None of these

4) 726395

(a) TMDNWR
(b) IMDNWI
(c) IMDNWR
(d) YMDNWY
(e) None of these

5) 831795

(a) BNJTWY
(b) INJTWR
(c) UNJYWY
(d) BNJTWR
(e) None of these

Directions:

In each question below is given a group of letters followed by five combinations of number / symbol codes numbered 1), 2), 3), 4) and 5). You have to find out which of the combinations correctly represents the group of letters based on the following coding system and the conditions and mark the number of that combination as your answer. Two or more conditions may be applicable to a single combination.

Letter :	P	M	A	C	X	E	D	O	U	H	B	N	Z	Y	G
Number / symbol Code :	3	$	4	7	9	β	6	2	#	©	8	1	%	5	?

Conditions:

i. If both the first and last elements are vowels, the codes for the vowels are to be interchanged.
ii. If the group of elements contains a single vowel, that vowel is to be coded as the code for the element following it.
iii. If the second element is a vowel and the fifth element is a consonant, the vowel is to be coded as the code for the consonant.

1) DEHAZN

(a) 6©%4%1
(b) 6β©441
(c) 6β©4β7
(d) 11©4%6
(e) 6%©4%1

2) OMPCZA

(a) 437$%2
(b) 2$37%4
(c) 2%37$4
(d) 4$37%2
(e) 4$3722

3) MHCYBG

(a) ?©758$
(b) $©758?
(c) 758$©?
(d) $©?758
(e) ?©57$8

4) OUBNYE

(a) β#8152
(b) β58152
(c) 25815β
(d) 2#815β
(e) β581#2

5) PXUNCM

(a) $91173
(b) $9#173
(c) 39117$
(d) 39717$
(e) 39#17$

TYPE- 4

Study the following information and answer the questions given.

In a certain code language "lana pa pu" means 'we provide study material',

"fa pa ma ju" means 'we score maximum selection',

"ma fa naju" means "study score the selection"

and "jubusafu" means "selection of the material". Then

Q.1) What is the code of "provide" in this code language?
(a) Pu
(b) Pa
(c) Na
(d) Bu
(e) Cannot be determined

Q.2) What is the code of "we the" in this code language?
(a) pa fu
(b) pa sa
(c) hu fu
(d) sa pu
(e) Cannot be determined

Q.3) What is the code of "material" in this code language?
(a) Hu
(b) Sa
(c) Pa
(d) Bu
(e) Cannot be determined

Q.4) What is the code of "provide of maximum"?
(a) sa pu fu
(b) fu bu sa
(c) pu fa ma
(d) fa pu sa
(e) Cannot be determined

Q.5) What is the code of "score" in this code language?
(a) Ju
(b) Fa
(c) Pa
(d) Ma
(e) Cannot be determined

TYPE 5

In each question a group of letters is given followed by four combinations of number/symbol numbered (a), (b), (c) and (d). Letters are to be coded as per the scheme and conditions given below. You have to find out the serial number of the combination, which represents the letter group. Serial number of that combination is your answer. If none of the combinations is correct, your answer is (e) i.e. None of these.

Letters :	C	M	S	I	N	G	D	K	A	L	P	R	B	J	E
Number/ Symbol Code :	7	@	4	#	%	$	6	1	2	£	5	*	9	8	3

Conditions:

i. If the first letter is a consonant and the last a vowel, both are to be coded as the code of the vowel.
ii. If the first letter is vowel and the last a consonant, the codes for the first and the last are to be interchanged.
iii. If no vowel is present in the group of letters, the second and the fifth letters are to be coded as ©.

1) BARNIS

(a) 9 2 * % # 4
(b) 4 2 * # % 4
(c) 9 2 * # % 9
(d) 9 2 4 # * %

2) DMBNIA

(a) 6 @ 9 % # 2
(b) 2 © 9 % # 2
(c) 2 @ 9 % # 6
(d) 2 @ 9 % # 2

3) IJBRLG

(a) # 8 9 * £ $
(b) 89*£
(c) $ 8 9 * £ #
(d) # 8 9 * £ #

4) BKGQJN

(a) 9 © $ 7© %
(b) % 1 $ 7 8 9
(c) 9 1 $ 7 8 %
(d) © 9 $ 7 % ©

5) EGAKRL

(a) # £ $ 2 1 *
(b) # £ $ 2 1 #
(c) £ $ 2 1 * #
(d) £ $ 2 1 * 3

Directions: Read the following information carefully and answer the questions given below. In a certain code language,

"filter water found everywhere" is coded as "bhu man juk lop"

"found lost items everywhere" is coded as " gan bhu nut juk"

"apply filter search items" is coded as " vax der man nut"

"found water desert search" is coded as "but juk der lop"

Q.1) How "apply" is coded in the given language?

(a) nut
(b) der
(c) vax
(d) man
(e) Can't be determined

Q.2) What is the code for "lost water"?

(a) juk gan
(b) nut gan
(c) gan lop
(d) lop bhu
(e) Can't be determined

Q.3) How "desert" is coded?

(a) gan
(b) bhu
(c) lop
(d) but
(e) None of these

Q.4) How "found filter" will be coded in the language?

(a) nut jok
(b) juk bhu
(c) Can't be determined
(d) man but
(e) juk man

Q.5) If MONKO is coded as 57637, then how KLJMN be coded in the same code?

Q.6) If H = 8 and HAT = 29, find how much BOX = ?

Directions: Study the following information carefully and answer the questions given beside:

In a certain code language,

'Become Your Role Model' is written as 'S4 C6 N5 Z4'

'Human Life World Change' is written as 'D6 I5 X5 M4'

'Insane Make Others Crazy' is written as 'D5 J6 N4 P6'

Q.1) What is the code of the word 'Revive' in the given code language?
(a) P5
(b) S5
(c) S6
(d) R6
(e) None of these

Q.2) Which of the following words will have their code 'F6' in the given code language?
(a) Eleven
(b) Enough
(c) Empire
(d) Both 'Eleven' and 'Empire'
(e) All of these

Q.3) What is the code of the word 'Super Over' in the given code language?
(a) T5 P4
(b) T4 P5
(c) T4 P4
(d) T5 P5
(e) None of these

Q.4) If the code for the words 'Never Look____' is coded as 'M4 C5 O5' in the coded language then what will be the missing word?
(a) Back
(b) Below
(c) Bad
(d) Before
(e) Both B and C

Q.5) What is the code of the word 'How is the josh' in the given code language?
(a) J2 I2 K4 T4
(b) I3 J3 K4 U3
(c) J2 I3 K4 U3
(d) J2 T5 T5 I2
(e) None of these.

Q.6) In an code language, if pen is written as 17717, then how will CAP be written in the same language?
(a) 4319
(b) 2320
(c) 4219
(d) 2319

Q.7) In a code language, if pen SOUP is written as TNVO. How will BOWL be written in that language?
(a) CPVM
(b) ANVK
(c) APVM
(d) CNXK

TYPE 6

Q. 1) If white is called blue, blue is called red, red is called yellow , green is called black , black Is called violet and violet is called orange, what would be the colour of human blood ?

Q.2) If 'DELHI' is coded as 73541 and 'CALCUTTA' as 82589622 the how CALICUT will be in that code language?

Q.3) If Earth is known as Water, water is known as sky , sky is known as tree, tree is known as shadow , shadow is known as fruit, fruit is known as paper , then where will fish swim ?

Q.4) If in a certain language 4*6 means 34

9*6 means 69 then what would be the meaning of 7*7?

(a) 49
(b) 56
(c) 63
(d) 64

Q.5) In a coded language 'M' is coded as 26

E is coded as 10 , R is coded as 36, then what will be the perfect code of Gold??

Q.6) If AT =20, BAT = 40, then CAT will be equal to?

Q.7) If LOSE is code as 1357 and GAIN is coded as 2468, what do the figures 84615 stand for?

Q.8) If RAJ = 29 then EDUCATION = ?

Q.9) In a certain code '329' means 'GOD IS LOVE'

927 MEANS 'LOVE IS BEAUTIFUL'

WHAT IS THE CODE FOR GOD?

By Satyam Sir

ALPHABET

Theory

Dictionary sequence is an arrangement of given words according to the alphabetical sequence. In this part, we have minimum four to five words which start with same alphabet and different alphabets, we have to arrange them in A to Z sequence. In question, find out any word from given sequence like middle word, second last and last word.

Word Sequence: We have different words arrange in a particular order. It is a set of related event, movements or items that follow each other in a particular order. Mostly in word sequence there are scientifically, geographical and other daily life events are given. We have to start the sequence from their minimum or startup word and then continue that sequence up to last point.

Word Formation: Word formation is the creation of a new word from given alphabets word. Word formation may ask for form or not form to given word.

Sequence Order of words According to Dictionary

In such type of questions, the candidate is required to choose that option from the given alternatives, which is having the correct sequential order of words according to the English dictionary. To check the order of words in English dictionary, first of all check the first letter of each word to find which among these comes first.
English alphabet is followed by second letter and so on. The word whose letter comes first in English alphabet comes first and the word whose letter comes second in English alphabet comes second and so on.

TYPE – 1

Q.1) Arrange the given words in the alphabetical order and tick the one that comes last.
(a) Extremist
(b) Extra
(c) Extraction
(d) Extraordinary
(e) External

Q.2) Arrange the given words in the alphabetical order and tick the one that comes last.
(a) Proposal
(b) Prosody
(c) Prosecute
(d) Proposition
(e) Propriety

Q.3) Arrange the given words in the alphabetical order and tick the one that comes last.
(a) Transport
(b) Translate
(c) Transition
(d) Transplant
(e) Transmit

Q.4) Arrange the given words in the alphabetical order and tick the one that comes last.
(a) Forgo
(b) Forget
(c) Formal
(d) Flourish
(e) Finger

Q.5) Arrange the given words in the alphabetical order and tick the one that comes last.
(a) Previous
(b) Perview
(c) Prevent
(d) Preview
(e) Prewar

Q.6) Arrange the given words in the alphabetical order and tick the one that comes last.
(a) Distance
(b) Determination
(c) Destitute
(d) Detergent
(e) Definite

Q.7) Arrange the given words in the alphabetical order and tick the one that comes last.
(a) Leave
(b) Lapse
(c) Language
(d) Leisure
(e) Laurel

Q.8) Arrange the given words in the alphabetical order and tick the one that comes last.
(a) Wanting
(b) Waiting
(c) Watching
(d) Waving
(e) Warring

Q.9) Arrange the given words in the alphabetical order and tick the one that comes last.
(a) Predictor
(b) Prefabricate
(c) Preferential
(d) Predispose
(e) Preformative

Q.10) Arrange the given words in the alphabetical order and tick the one that comes last.
(a) Herald
(b) Hedge
(c) Heavy
(d) Hesitate
(e) Heredity

TYPE – 2

Q.1) Arrange the following words as per meaningful order.
(a) Family
(b) Community
(c) Member
(d) Locality
(e) Country

Q.2) Arrange the following words according to English dictionary
(1) Hepatitis
(2) Cholera
(3) Peptidoglycan
(4) Chitin

Select the correct answer using the code below:
(a) 2, 3, 1, 4
(b) 4, 2, 1, 3
(c) 4, 1, 3, 2
(d) 3, 1, 4, 2

Q.3) Arrange the following words in a logical sequence
(1) Trillion
(2) Thousand
(3) Billion
(4) Hundred
(5) Million

Select the correct answer using the code below:
(a) 1, 2, 3, 4, 5
(b) 1, 5, 3, 2, 4
(c) 4, 2, 3, 5, 1
(d) 4, 2, 5, 3, 1

Q.4) Arrange the following words according to English dictionary.
(1) Episode
(2) Epistle
(3) Episgraph
(4) Epigraph

Select the correct answer using the code below:
(a) 1, 2, 3, 4
(b) 4, 2, 1, 3
(c) 3, 2, 1, 4
(d) 4, 3, 1, 2

Q.5) Arrange the following words as per meaningful order:
(1) Child
(2) Profession
(3) Marriage
(4) Infant
(5) Education

Select the correct answer using the code below:
(a) 1, 3, 5, 2, 4
(b) 2, 1, 4, 3, 5
(c) 4, 1, 5, 2, 3
(d) 5, 4, 1, 3, 2

Q.6) Arrange the following in the meaningful/logical order:
(1) Exhaust
(2) Night
(3) Day
(4) Sleep
(5) Work

TYPE– 3

Q. If the following words are arranged according to English Dictionary, which word will be on third place?

1. (a) KNOW
(b) KNACK
(c) KNIT
(d) KNOB

2. (a) rhapsody
(b) revolve
(c) rheumatism
(d) reward

3. (a) heart
(b) heavy
(c) health
(d) heathen

4. (a) prize
(b) prosecute
(c) prompt
(d) prostrate

TYPE-4

1. From the given option which word can't be formed?

1. REPUBLICAN
(a) CLIP
(b) PURE
(c) ANKLE
(d) BANE

2. ESTRANGE
(a) GENERATE
(b) SERGEANT
(c) REAGENTS
(d) GREAT

3. Some letters are given with numbers 1 to 9. Select the sequence of numbers which arranges the letters into a meaningful word.

1. N N D I N I T G A
1 2 3 4 5 6 7 8 9

(a) 215 764 389
(b) 312 546 798
(c) 421 357 689
(d) 423 685 917

2. D E N A R I
1 2 3 4 5 6
(a) 4, 5, 1, 2, 3, 6
(b) 3, 2, 1, 6, 5, 4
(c) 6, 4, 2, 3, 5, 1
(d) 1, 2, 5, 4, 6, 3

3. Which one of the given response would be a meaningful order of the following:
(1) Elephant
(2) Cat
(3) Mosquito
(4) Tiger
(5) Whale

Select the correct answer using the code below:
(a) 1, 3, 5, 4, 2
(b) 2, 5, 1, 4, 3
(c) 3, 2, 4, 1, 5
(d) 5, 3, 1, 2, 4

Q.4) Arrange the given dates of birth in descending chronology.
(1) 15.04.1950
(2) 14.05.1960
(3) 14.06.1960
(4) 20.04.1950
(5) 25.05.1960

Select the correct answer using the code below:
(a) 1, 5, 2, 3, 4
(b) 1, 3, 2, 4, 5
(c) 1, 4, 2, 5, 3
(d) 1, 2, 4, 5, 3

PROBLEMS ON AGES

TYPE 1

Q.1) Father is aged three times more than his son Ronit. After 8 years, he would be two and a half times of Ronit's age. After further 8 years, how many times would he be of Ronit's age?

(a) 2 times
(b) 2.5 times
(c) 2 ¾ times
(d) 3 times

Q.2) The present age of Aradhana and Aadrika is in the ratio 3:4. 5 years back, the ratio of their ages was 2:3. What is the present age of Aradhana?

(a) 12 years
(b) 15 years
(c) 20 years
(d) 22 years
(e) 10 years

Q.3) If the total ages of Iqbal and Shikhar is 12 years more than the total age of Shikhar and Charu. Charu is how many years younger than Iqbal?

(a) 11 years
(b) 12 years
(c) 15 years
(d) None of the above
(e) Cannot be Determined

Q.4) A father is twice as old as his daughter. If 20 years ago, the age of the father was 10 times the age of the daughter, what is the present age of the father?

(a) 40 years
(b) 32 years
(c) 33 years
(d) 45 years
(e) 22 years

Q.5) Tanya's grandfather was 8 times older to her 16 years ago. He would be 3 times her age 8 years from now. Eight years ago, what was the ratio of Tanya's age to that of her grandfather? [UPSC 2003]

(a) 1:2
(b) 1: 5
(c) 3: 8
(d) 11:53
(e) None of these

Q.6) The age of father 10 years ago was thrice the age of his son. Ten years hence, father's age will be twice that of his son. the ratio of their present ages is:

(a) 5: 2
(b) 7 : 3
(c) 9: 2
(d) 13: 4

Q.7) Eighteen years ago, the ratio of A's age to B's age was 8 : 13. Their present ratios are 5 : 7. What is the present age of A ?

(a) 60 years
(b) 70 years
(c) 50 years
(d) 40 years

Q.8) Rajan got married 8 years ago. His present age is 6/5 times his age at the time of his marriage. Rajan's sister was 10 years younger to him at the time of his marriage. The age of Rajan's sister is: [UPSC 2003]

(a) 32 years
(b) 36 years
(c) 38 years
(d) 40 years

Q.9) Ratio between the present ages of A and B is 2 :3, respectively. After 5 years, the ratio between their ages will be 3 : 4. What is B's age at present?

(a) 20 years
(b) 15 years
(c) 10 years
(d) 25 years

Q.10) The ratio of the present ages of Ram and Ramesh is 3 : 5. After 7 years the ratio of their ages will be 4 : 5. Find the present age of Ramesh.

(a) 5 years
(b) 15 years
(c) 7 years
(d) 12 years

TYPE 2

Q.1) The average age of a man and his son is 55 years. The ratio of their ages is 7 : 4, respectively. What will be the ratio of their ages after 6 years?
(a) 1 : 2
(b) 12 : 7
(c) 25 : 17
(d) 38:23

Q.2) At present, A is younger than B by 8 years. If 4 years ago, their ages were in the ratio 1 : 2, then what is the present age of B (in years)?
(a) 11
(b) 20
(c) 12
(d) 18

Q.3) Eight years ago, the ratio of ages of A and B was 5: 4. The ratio of their present ages is 6: 5. What will be the sum (in years) of the ages of A and B after 7 years from now?
(a) 80
(b) 112
(c) 90
(d) 102

Q.4) The ratio of the ages of A and B, 8 years ago, was 5 : 7. The ratio of their ages, 8 years from now, will be 9 : 11. If the present age of C is 13 years less than that of B, and the present age of D is 8 years less than that of the age of A, then the sum of the present ages of C and D, in years, is:
(a) 47
(b) 55
(c) 43
(d) 53

Q.5) Six years ago, the ratio of the ages of Kunal and Sagar was 6 : 5. Four years hence, the ratio of their ages will be 11 : 10. What is Sagar's age at present?
(a) 16 years
(b) 18 years
(c) 20 years
(d) Cannot be determined

Q.6) Seven years ago, the ratio of the ages of A and B was 4 : 5. Eight years hence, the ratio of the ages of A and B will be 9:10. What is the sum of their present ages in years?
(a) 41
(b) 82
(c) 32
(d) 56

TYPE 3

Q.1) The present ages of three persons in proportions 4 : 7 : 9. Eight years ago, the sum of their ages was 56. Find their present ages (in years).
(a) 8, 20, 28
(b) 16, 28, 36
(c) 20, 35, 45
(d) None of these

Q.2) A woman says, "If you reverse my own age, the figures represent my husband's age. He is, of course, senior to me and the difference between our ages is one-eleventh of their sum." The woman's husband age is? (UPSC CDS 2014)
(a) 45
(b) 24
(c) 42
(d) 54

Q.3) The age of Q exceeds the age of P by 3 years. The age of R is twice the age of P and the age of Q is twice the age of S. Further, the age difference of R and S is 30 years. What is the sum of the ages of P and Q?
(a) 35 years
(b) 38 years
(c) 39 years
(d) 45 years

Q.4) The sum of the ages of a mother, son and daughter is 70 yrs. If mother is thrice as old as her son and the daughter is 5 years older than her brother. How old is mother?
(a) 39 yrs
(b) 45 yrs
(c) 42 yrs
(d) 35 yrs

Q.5) Five years ago Laurel was four years more than four times the age of his son. Three years hence Laurel`s age will be six years less than thrice the age of his son. After how many years from now will their combined age be 50 years?
(a) 10
(b) 8
(c) 6
(d) 3

Q.6) The present average age of a family of four members is 36 years. If the present age of the younger member of the family be 12 years, the average age of the family at the birth of the youngest member was?

(a) 48 years
(b) 40 years
(c) 32 years
(d) 24 years

Q.7) 3 years ago, the average age of a family of 5 members was 17 years. A baby having been born, the average age of the family is the same today. The present age of the baby is?
(a) 3 years
(b) 2 years
(c) 1.5 years
(d) 1 years

Q.8) When the average age of a husband and wife and their son was 42 years, the son got married and a child was born just one year after the marriage. When child turned to the five years then the average age of the family became 36 years. What was the daughter-in-law at the time of marriage?
(a) 26 years
(b) 25 years
(c) 24 years
(d) 23 years

Q.9) The average age of a family of 10 members is 20 years. If the age of the youngest member of the family is just then the average age of the members of the family before the birth of the youngest member was approximately?
(a) 27.14 years
(b) 12.5 years
(c) 14.28 years
(d) $11\frac{1}{9}$ years

Q.10) Your mother is 4 Years younger than your father. Your father is 6 times of your age. If your age is 6 years. Find the age of your mother
(a) 36
(b) 34
(c) 28
(d) 32

Q.11) A man was 32 years of age when he had his first son. His wife was 35 years of age when his son attained the age of 7 years. The difference in age between the man and his wife is
(a) 7 years
(b) 3 years
(c) 5 years
(d) 4 years

Q.12) A father's age is one more than 5 times of his son's age. After 3 years, the father's age would be 2 less than four times the son's age. Find the present age of the father.
(a) 30 years
(b) 40 years
(c) 31 years
(d) 29 years

Q.13) My age is two years less than twice that of my brother. If I am sixteen years old, how old is my brother?
(a) 7 years
(b) 9 years
(c) 10 years
(d) 14 years

Q.14) Ashok's mother was 3 times as old as Ashok 5 years ago. After 5 years she will be twice as old as Ashok. How old is Ashok today?
(a) 10 years
(b) 15 years
(c) 20 years
(d) 25 years

Q.15) Ravi has spent a quarter ($\frac{1}{4}$) of his life as a boy, one-fifth ($\frac{1}{5}$) as a youth, on-third ($\frac{1}{3}$) as man and thirteen (13) years in old age. What is his present age ?
(a) 70 years
(b) 80 years
(c) 60 years
(d) 65 years

Q.16) In a zoo, there are rabbits and chickens. Their heads are counted, there are 200 and if legs are counted, there are 580. How many chickens are there?
(a) 90
(b) 100
(c) 110
(d) 120

SYLLOGISM

TYPE 1

Q1. Two statements are given, followed by two conclusions numbered 1 and 2. Assuming the statements to be true, even if they seem to be at variance with known facts, decide which of the conclusions logically follow(s) from the statements.

Statements:
All hooks are hangers.
Some hangers are locks.

Conclusions:
1. Some locks are hangers
2. All locks are hooks.

(a) Only conclusion 1 follows
(b) Neither conclusion 1 nor 2 follows
(c) Only conclusion 2 follows
(d) Both conclusions 1 and 2 follow

Q2. **Statements:**
All donkeys are horses.
No cow is a horse.

Conclusions:
I. Some cows are donkeys
II. Some horses are donkeys.
III. No donkeys is a cow.

(a) Both conclusions II and III follow
(b) Only conclusion II follows
(c) Only conclusion III follows
(d) Either conclusion II or III follows

Q3. **Statements:**
All tables are beds.
No bed is a chair.

Conclusions:
I. Some beds are tables.
II. Some chairs are tables.

(a) Only conclusion I follows
(b) Both the conclusions I and II follow
(c) Either conclusion I or II follows
(d) Only conclusion II follows

Q4. **Statements**:
All nurses are gods.
Some nurses are doctors.

Conclusions:
I. Some gods are nurses.
II. Some doctors are gods.

(a) Both conclusions I and II follow
(b) Only conclusion II follows
(c) Either conclusion I or II follows
(d) Only conclusion I follows

Q5. **Statements:**
1) Some Cats are Rats.
2) All Rats are Bats.

Conclusions:
I. Some Cats are Bats.
II. Some Bats are Cats.

(a) Only conclusion II follows
(b) Only conclusion I follows
(c) Both conclusions I and II follow
(d) Neither conclusion I nor II follows

Q6. **Statements:**
1) All horses are bears.
2) All bears are donkeys.

Conclusions:
I. All donkeys are horses.
II. All horses are donkeys.

(a) Both conclusions I and II follow
(b) Only conclusion I follows
(c) Only conclusion II follows
(d) Neither conclusion I nor II follows

Q7. **Statements:**
All bottles are glasses.
All glasses are jugs.

Conclusions:
I. All bottles are jugs.
II. All jugs are bottles.
III. Some glasses are bottles.

(a) Only conclusion I and III follow
(b) Only conclusion I and II follow
(c) Only conclusion I follows
(d) Only conclusion II and III follow

Q8. **Statements:**
All chains are glasses.
All glasses are tables.

Conclusions:

I. Some glasses are chains.
II. Some tables are glasses.

(a) Only conclusion II follows
(b) Both conclusions I and II follow
(c) Only conclusion I follows
(d) Neither conclusion I nor II follows

TYPE 2

Q1. **Statements:**
Some jars are mugs.
Some mugs are pots.

Conclusions:
I. Some pots are mugs.
II. Some pots are jars.

(a) Both conclusions I and II follow
(b) Only conclusion I follows
(c) Neither conclusion I nor II follows
(d) Only conclusion II follows

Q2. **Statements**:
1. Some buns are tarts
2. All tarts are pastries.
3. All pastries are breads.

Conclusions:
I. Some breads are buns.
II. Some pastries are buns.
III. Some tarts are buns.
IV. Some buns are breads.

(a) Only conclusions I and IV follow
(b) Only conclusions II and III follow.
(c) All the conclusions follow.
(d) Only conclusions I and II follow.

Q3. **Statements:**
All schools are pen.
All books are School.

Conclusion:
1. All books are pen.
2. All pens are book.

(a) Both conclusions 1 and 2 follow
(b) Only conclusion 2 follows
(c) Neither conclusion 1 nor 2 follows
(d) Only conclusion 1 follows

Q4. Statements:

Some stars are planets.
Some planets are comets.
Conclusions:
I. Some comets are planets
II. All stars are comets

(a) Only conclusion I follows
(b) Only conclusion II follows
(c) Both conclusions I and II follow
(d) Neither conclusion I nor II follows

Q5. **Statements:**
1. All malls are kings.
2. No king is a heartz.

Conclusions:
I. No mall is a heartz.
II. All kings are malls.

(a) Either conclusion I or II follows
(b) Only conclusion II follows.
(c) Only conclusion I follows
(d) Neither conclusion I nor II follows

Q6. **Statement:**
Some monkeys are bottles
All the bottles are pigs

Conclusions:
I. All the pigs are bottles
II. All monkey are pigs

(a) Only conclusion II follows
(b) Only conclusion I follows.
(c) Both conclusions I and II follow
(d) Neither conclusion I nor II follow.

Q7. **Statements:**
Some pen are Ink.
Some Paper are Ink.

Conclusions:
(I) All Ink are Pen.
(II) Some Pens are Paper.

(a) Only conclusions II follows.
(b) None of the conclusions follows.
(c) Only conclusions I follows.
(d) Either conclusion I or conclusion II follows.

TYPE 3

Q1. **Statements:**
1. Some players are singers.
2. All singers are tall.
3. Some players are strong.

Conclusions:
I. Some players are tall.
II. All players are strong.

(a) Neither conclusion I nor II follows
(b) Only conclusion I follows
(c) Only conclusion II follows
(d) Either conclusion I or II follows

Q2. **Statement:**
All refrigerators are television sets.
Some speakers are television sets.
All speakers are fans.

Conclusion:
I. Some fans are television sets.
II. Some television sets are refrigerators.
III. No fans is a speaker

(a) All of the conclusions follow.
(b) Only conclusions I and III follow.
(c) Only conclusions I and II follow.
(d) Only conclusions II and III follow.

Q3. Statements:
1. All boats are cats.
2. All cats are bats.
3. All bats are rabbits.

Conclusions:
I. All cats are rabbits.
II. All bats are boats.
III. All boats are rabbits

(a) Only conclusions II and III follow
(b) Only conclusions I and III follow
(c) Only conclusions I and II follow
(d) Only conclusion I follows

Q4. **Statements:**
1. Some students are boys.
2. All boys are honest.
3. Some honest are toppers.

Conclusions:
I. Some toppers are boys.
II. Some honest are boys.
III. Some honest are students.
IV. Some toppers are students.

(a) Only conclusion IV follows
(b) Only conclusions I, II and IV follow
(c) Only conclusions I and IV follow
(d) Only conclusions II and III follow

Q5. **Statements:**
Some machines are equipment.
No machine is a radio.
All TV are radios.

Conclusions:
I. Some equipment are machines.
II. No TV is a machine.
III. Some radios are TV.

(a) All of the conclusions follow
(b) Only conclusions I and II follow
(c) Only conclusions II and III follow
(d) Only conclusions I and III follow

Q6. **Statements:**
Some pictures are prizes.
Some prizes are erasers.
Some erasers are helmets.

Conclusions:
I. Some helmets are Prizes.
II. Some erasers are pictures.
III. No helmet is a Prize.

(a) Either conclusion II or III follows
(b) Either conclusion I or II follow
(c) Only conclusion II follow
(d) Either conclusion I or III follows

Q7. Statements:
All speakers are equipment.
All equipment are wires.

Conclusions:
1. Some wires are equipment.
2. No speaker is wire.
3. Some speakers are not wires.

(a) Both conclusions 1 and 2 follow.
(b) Only conclusion 1 follows.
(c) All conclusions 1, 2 and 3 follow.
(d) Only conclusion 3 follows.

Q8. **Statements:**
No man is engineer.
No engineer is driver.
Some drivers are shop-keepers.

Conclusions:
1. Some men are drivers.
2. No shop-keepers are engineer.
3. Some shop-keepers are not engineers.

(a) Only conclusion 1 follows.

(b) All of the conclusions follow.
(c) Only conclusion 3 follows.
(d) Either conclusion 1 or 2 follows.

TYPE 4

Q1. **Statements:**
Some bats are crows.
Some crows are eagles.

Conclusions:
I. Some bats are eagles
II. No eagle is a bat

(a) Only conclusion I follows
(b) Both conclusions I and II follow
(c) Either conclusion I or II follows
(d) Only conclusion II follows

Q2. **Statements:**
1. All workers are honest.
2. Few of my friends are workers.
3. All my friends are honest.

Conclusion:
I. All my friends are workers.
II. All workers are my friends.
III. All my non - worker friends are honest.

(a) Only conclusion I and II follow.
(b) Only conclusion II follow.
(c) Only conclusion I and III follow.
(d) Only conclusion III follow.

Q3. **Statements:**
All plums are pomegranates.
Some plums are lemons.

Conclusions:
I. Some pomegranates are lemons.
II. No lemon is a pomegranate.
III. Some pomegranates are plums.

(a) Only conclusions I and III follow
(b) Only conclusion III follows
(c) Only conclusion I and II follow
(d) Only conclusion I follows

Q4. **Statement I:** No statues are icons.
Statement II: Some busts are statues.

Conclusion I: No icons are busts.
Conclusion II: Some busts are icons.

(a) Only conclusion I follows
(b) Only conclusion II follows
(c) Both conclusions I and II follow
(d) Either conclusion I or conclusion II follows

Q5**. Statement I**: No cars are trucks
Statement II: All tata are cars

Conclusion I: All trucks are tata
Conclusion II: No tata are trucks

(a) Only conclusion I follows
(b) Only conclusion II follows
(c) Both conclusions I and II follow
(d) Neither conclusion I nor conclusion II follows

Q6. **Statements:**
I. No pin is silver.
II. All silver are metal.
III. Some metal are gold.

Conclusions:
I. No metal is pin.
II. Some pin are gold.
III. Some gold are silver.

(a) Only I follows
(b) Only II follows
(c) Only III follows
(d) None follows

Q7. **Statements:**
Some cars are bikes.
Some cycles are not bikes.

Conclusions:
I. No car is a cycle.
II. Some cars are cycles.

(a) Only I follow.
(b) Only II follows.
(c) Either I or II follow.
(d) None of these.

Q8. Direction: Each of the following question has four there are logically correct. Some of which look factually absurd, ignore the absurdity and look to the logically correct. Choose the statement which is follow/ correct.
All books are friends. All friends are dangerous. Therefore, All dangerous are books.
All tables are ants. Some chairs are ants. Therefore, All ants are tables.
No man is a monkey. John is a man. Therefore, John is not a monkey.

All birds are parrots. Manish is a parrot. Therefore, Manish is a bird.

TYPE 5

Q1. Statements:
All breads are cakes.
All eggs are cakes.

Conclusions:
I. Some cakes are breads.
II. Some breads are eggs.
III. No bread is an egg.

(a) Conclusion I and either conclusion II or III follow.
(b) Only conclusions I and II follow.
(c) Only conclusions I and III follow.
(d) All the conclusions follow.

Q2. Statements:
Some essays are poems.
Some poems are directors.
All directors are singers.

Conclusions:
I. Some directors are poems.
II. Some singers are essays.
III. Some singers are poems.

(a) Only conclusion I follows.
(b) Only conclusions II and III follow.
(c) Only conclusions I and II follow.
(d) Only conclusions I and III follow.

Q3. Statement:
All wheats are barley.
All peas are barley.

Conclusion I: Some wheat are peas.
Conclusion II: No wheats are peas.

(a) Only conclusion I follows
(b) Either conclusion I or conclusion II follows.
(c) Only conclusion II follows.
(d) Both conclusions I and II follow.

Q4. Statements:
No customer is manager.
All salesmen are managers.

Conclusions:
I. No salesman is customer.
II. Some managers are salesmen.
III. Some salesmen are customers.

(a) Only conclusion I and II follow.
(b) Either conclusion I or III follows.
(c) Only conclusion I follows.
(d) Only conclusion I and III follow.

Q5. Statement
I. Some bulbs are stems.
II. No root is cotton.
III. All stems are roots.

Conclusion
I. Some bulbs are cotton.
II. Some roots are bulbs.
III. No stem is cotton.

(a) Both I and II follow.
(b) Both II and III follow.
(c) Both I and III follow.
(d) All follow.

Q6. Statements:
Some A are B
Some A are C
Some D are C

Conclusions:
I. Some D are A
II. Some B are C

(a) Only I follows
(b) Only II follows
(c) Either I or II follows
(d) Neither I or II follows

Q7. Statements:
I. All Eagle are Lizard.
II. All rabbit are snake.
III. All snake are Eagle.

Conclusions:
I. All Rabbit are Lizards.
II. All Eagle are Rabbit.
III. All Lizard are Snake.
IV. All Snake are Lizard.

(a) Only conclusion I follows
(b) Only Conclusion I and IV follows
(c) Only conclusion II and III follows
(d) All follow

Q8. **Statement** I**:** Some guitars are electronic.
Statement II**:** All cables are electronic.

Conclusion I**:** Some guitars are cables.
Conclusion II**:** No guitar is a cable.

(a) Only conclusion I follows
(b) Only conclusion II follows

(c) Both conclusions I and II follow
(d) Either conclusion I or conclusion II follows

TYPE 6

Q1. **Statements:**
I. Some Bike are Blue.
II. Some Blue are Bag.
III. All Bag are Small.

Conclusions:
I. Some Blue are Small.
II. No Small being a bike is a possibility.
III. Some Bike being a Bag is a possibility.

(a) Only I follows
(b) Only II follows
(c) Only III follows
(d) All follows

Q2. **Statements:**
Some P are C.
No R is J.
Some J are P.

Conclusions:
I. Some C are R.
II. No C is J.
III. Some P are not R.

(a) Only conclusion I follows
(b) Only conclusion III follows
(c) Only conclusion II follows
(d) None follows

Q3. **Statements:**
60% of salads are fishes.
No fish is fruit.
90% of fruits are chickens.

Conclusions:
I. Some salads are not some chickens.
II. No salads are fruits.
III. It is not possible that some chickens are fishes.

(a) Only II follows.
(b) Only I follows.
(c) Either I or III follows.
(d) Only III follows.

Q4. **Statements:**
I. Only a few cups are jugs.
II. Some straws are papers.
III. No jugs are straws.

Conclusions:
I. All jugs being cup is possible.
II. All straws being papers is possible.
III. Some cups are straws.

(a) Only I follows.
(b) Both I and II follows.
(c) Only III follows.
(d) None of these.

Q5. Statements:
No fan is a tube lights.
All light is a tube light.
Some lights are bulb.

Conclusions:
I. No light is a fan.
II. Some tube light is a bulb.
III. Some bulb is a fan.

(a) Only conclusion I follows.
(b) Only conclusion II follows.
(c) Both I and II follow.
(d) Both II and III follow.

Q6. **Statements:**
All table are mouse.
All file is mouse.

Conclusions:
I. Some table are file.
II. No table is file.

(a) Only conclusion I follows
(b) Either conclusion I or II follows
(c) Only conclusion II follows
(d) Neither conclusions I nor II follow

Q7. **Statements:**
Some winners are gold
Some silver is winner
No gold is silver

Conclusion:
I. some winner are not silver.
II. some winner are not gold.

(a) Only conclusion I follows
(b) Both conclusion I and II follows
(c) Only conclusion II follows
(d) Neither conclusions I nor II follow

Q8. **Statement**
I. No waste is tree.
II. Some trees are post.
III. All posts are woods.

Conclusion
I. No post is waste.
II. No wood is tree.
III. Some woods are not waste.

(a) Only I follows.
(b) Only II follows.
(c) Only III follows.
(d) None follows.

Q9. **Statement**
I. No country is pop.
II. No stereo is pole.
III. Some poles are country.

Conclusion
I. Some stereo may be country.
II. No pop is pole.
III. Some pops are poles.

(a) Only II follows.
(b) Either I or II and III follow.
(c) Either II or III and I follow.
(d) Either I or III and II follow.

Q10. **Statements:**
I. Some floors are even.
II. Some even are odd.
III. No odd is prime.

Conclusion:
I. No floors are prime.
II. Some floors are odd.
III. Some prime are floors.

(a) Only conclusion II follows.
(b) Only conclusion II and III follow.
(c) Either I or III follow.
(d) Only conclusion I follow.

Q11. **Statements:**
I. All Creta are Cruz
II. Some Cruz are Eon
III. All Eon are Black

Conclusions:
I. Some Cruz are Black.
II. No Black is Creta.
III. Some Creta are Eon.

(a) Only conclusion I follows.
(b) Either conclusion II or III follow.
(c) Only conclusions II and III follow.
(d) Either conclusion I or III follow

BLOOD RELATION

TYPE 1

Q1. A woman introduces a man as the son of the brother of her mother's husband. How is the man related to the woman?

(a) Brother
(b) Cousin
(c) Father
(d) Son

Q2. P, Q, R, S, T, U and V are seven family members at a wedding ceremony. Q is the mother of T as well as the daughter of R. V is the brother of U. S is the wife of R. P is Q's husband. U is T's wife. How is S related to P?

(a) Mother
(b) Brother's wife
(c) Mother-in-law
(d) Wife's sister

Q3. A has 2 sisters B and C. D is husband of A. What is the relationship of the daughters of B and C with D?

(a) D is their uncle
(b) D is their aunty
(c) D is their cousin
(d) D is their daughter

Q4. Looking at the portrait of Ravi, Vikas said. "I have no brother or sister but Ravi's father is my father's son". How is Vikas related to Ravi?

(a) Father
(b) Son
(c) Brother
(d) Husband

Q5. E is the brother of F. D is the wife of E. G is the father of H. F is the sister of G. How is E related to G?

(a) Brother
(b) Son
(c) Brother in law
(d) Father

Q6. Pointing towards a picture, Ram said, "The woman in the picture is the wife of the only son of the mother of my father's sister". How is the woman related to Ram?

(a) Wife
(b) Mother
(c) Sister
(d) Daughter

Q7.Ashok's brother's sister is the wife of Ram's son Rahul. How is Ashok related to Rahul's daughter?

(a) Son
(b) Brother
(c) Mother's brother
(d) Father's brother

Q8. Pointing towards a lady in a photo, Rinku said, "She is my son's sister's mother". How that lady is related to Rinku?

(a) Daughter
(b) Daughter in law
(c) Sister
(d) Wife

Q9. I is the brother of K. H is the wife of I. J is the mother of L. K is the brother of J. How K is related to L?

(a) Nephew
(b) Maternal Uncle
(c) Brother
(d) Father

TYPE 2

Read the following information carefully and answer the question given below:

'P & Q' means 'P is the son of Q'.
'P @ Q' means 'P is the brother of Q'.
'P % Q' means 'P is the sister of Q'.
'P $ Q' means 'P is the daughter of Q'.
'P # Q' means 'P is the father of Q'.

Q.1. How is W related to Z, in the expression 'V & W # T @ X % Y $ Z'?

(a) Brother
(b) Husband
(c) Father
(d) Son

Q2. A is the son of B but B is not the father of A. How is B related to A?

(a) Grandmother
(b) Grandfather
(c) Mother
(d) Uncle

Q3. Read the following information carefully and answer the questions that follow:
All the family members P, Q, R, S T and U are having dinner together. Q is the son of R but R is not the mother of Q. P and R are married. T is younger brother of R. S is the daughter of P and U is the elder sister of Q.

Who among the following is the son of P?
(a) S
(b) U
(c) T
(d) Q

Q4. If
B × A means 'B is the mother of A'
B + A means 'B is the father of A'
B @ A means 'B is the husband of A'
B - A means 'B is the daughter of A'

C @ F × K + D indicates what relationship of C with K?
(a) Father
(b) Husband
(c) Father's sister
(d) Paternal grandfather

Q5. Study the given information carefully and answer the question that follows.
In the Kasam family of three generations, there are eight members - A, B, C, D, E, F, G and H. C is G's daughter-in-law. E is B's only grandchild. D is one of E's two maternal uncles. G and D, one of whom is male, are the children of B. F is the father of D. H is G's husband.

Which of the following statements is true?
(a) There are two males in the second generation.
(b) A is the sister-in-law of H
(c) There are equal number of males and females in the family.
(d) C is the grand daughter-in-law of F.

Q6. Read the given information and answer the question that follows.
'P ₹ Q' means 'P is the mother of Q';
'P $ Q' means 'P is the husband of Q';
'P # Q' means 'P is the sister of Q';
'P ~ Q' means 'P is the son of Q'.

X ~ H ₹ D $ Y represents what relation of Y with H?
(a) Mother
(b) Father
(c) Father-in-law
(d) Daughter-in-law

Q7. In a certain code, if
(i) C + D means C is D's father.
(ii) C - D means C is D's mother.
(iii) C ÷ D means C is D's daughter.
(iv) C # D means C is D's sister.
A + G ÷ R # K – O

How is A related to R in the given expression?
(a) Son
(b) Husband
(c) Father
(d) Brother

Q8. 'A @ B' means 'A is the son of B'
'A & B' means 'A is the mother of B'
'A # B' means 'A is the daughter of B'

Which of the following options means 'Q is the wife of S'?
(a) P @ Q & R # S
(b) R @ S @ Q # P
(c) R @ S & Q # P
(d) P # Q @ R # S

Q9. T, S and R are three brothers. T's son Q is married to K and they have one child Rahul blessed to them. M the son of S is married to H and this couple is blessed with a daughter Madhvi. R has a daughter N who is married to P. This couple has one daughter Karuna born to them. How is Madhvi related to S?
(a) Daughter
(b) Niece
(c) Grand daughter
(d) None of these

TYPE 3

Q1. P, Q, R, S, T, U and V are seven members of a family. R is the daughter of U who is the wife of P. P is the son of T who is the father of V. Q is the son of S who is the wife of V. How is V related to R?
(a) V is the paternal aunt of R.
(b) V is the maternal uncle of R.
(c) V is the paternal uncle of R.
(d) V is the nephew of R.

Q2. A, B, C, D, E, F and G are seven members of a family. C is a daughter of E who is a husband of F. A is a son of D who is a husband of G. B is a brother of G

but is a father of F. How many female members are there in the family?
(a) Two
(b) Three
(c) Four
(d) Five

Q3. In a family of eight persons, there are two couples, each having two children. C and D are cousin brothers. The father of E is married to G, who is the aunt of F. F's mother, H is married to B, the brother of A. C is the nephew of H. How is A related to D?
(a) Father
(b) Brother
(c) Nephew
(d) Uncle

Q4. There are two married couples in a family. % has two children. A is wife of @ who is brother of #. F is daughter of %. U is sister of S, who is son of @. T is son of #, who is a male.
How is A is related to %?
(a) Sister
(b) Brother
(c) Brother -in- law
(d) Sister- in- law

Q5. M is the brother of N. N is the brother of P. Q is the father of M. Based on these statements, which of the following statements cannot be definitely true?
(a) N is the son of Q
(b) M is the brother of P
(c) P is the brother of M
(d) N is the brother of M

Q6. Rohan has two child and is grandfather of Richa who is daughter of Sima. Aakash is nephew of Asha who is sister of Mohan. Mohan is father of Richa who is wife of Amar. How Amar is related to Aakash?
(a) Father
(b) Brother
(c) Sister
(d) Brother-in-law

Q7. In a family of six members F is Father of D. D is the only sister of B. C is the only son of A who is wife of B. E is married to grandson of F. How is C related to E?
(a) Husband
(b) Son
(c) Brother
(d) Uncle

Q8. Sumit and Drona are brothers. Drona is married to Dhani. Dhani is mother – in – law of Shomit who is husband of Seema. How is Drona related to Shomit?
(a) Brother – in - law
(b) Brother
(c) Father – in – law
(d) Father

TYPE 4

Q1. Pointing to a photograph, Robert told his son, "This lady is the mother of the daughter of the daughter-in-law of your father's brother."
How is the lady related to Robert's son?
(a) Mother
(b) Sister
(c) Sister – in – law
(d) Cousin

Q2. 6 members of a family works in a company. S's son is Z. B is married to S. Y and S are siblings. D is brother of Z. F is daughter of B. Y is a male. Mother of Z is not S. How is D related to Y?
(a) Brother
(b) Uncle
(c) Nephew
(d) Son

Q3. Pointing to a woman in a photograph a man says " She is the daughter of my only brother's father-in-law's only daughter's husband's sister".
How is the woman related to that man?
(a) Daughter
(b) Cousin
(c) Niece
(d) Can't be determined

Q4. Deepthi said to her friend, "That girl playing with the dog is the younger of the two sisters of the son of my mother's husband." How is the girl playing with the dog related to Deepthi?
(a) Wife
(b) Grand daughter
(c) Daughter – in – law
(d) Sister

Q5. Pointing to a picture Reena told Vignesh, "Her only sibling's wife is the only daughter-in-law of my only brother's mother's husband." How is the person in the picture related to Reena, if Reena's father has only two child?
(a) Sister

(b) Wife
(c) Brother
(d) None of these

Q6. A + B means 'A is the father of B';
A – B means 'A is the sister of B';
A × B means 'A is the brother of B';
A ÷ B means 'A is the mother of B';

If, U + H × L – Q ÷ R – Y, then how is L related to Y?
(a) Sister
(b) Mother's sister
(c) Mother's brother
(d) Maternal grandmother

Q7. Mr. Salman said that "Rahim's son is my son's maternal uncle". How is Rahim related to Salman?
A. brother-in-law
B. father-in-law
C. father
D. Grand-father

(a) A
(b) B
(c) C
(d) D

TYPE 5

Q1. 'A 4 B' means 'A is mother of B', 'A 6 B' means 'A is wife of B', 'A 8 B' means 'A is son of B' and 'A 2 B' means 'A is father of B'. Which of the following represents F as the grandson of V?
(a) F 4 V 8 H 8 R
(b) H 4 F 8 A 8 V
(c) R 4 V 6 B 2 F
(d) F 4 A 8 R 2 V

Q2. A + B means 'A is sister of B'
A – B means 'A is daughter of B'
A × B means 'A is brother of B'
A ÷ B means 'A is mother of B'

If D + P ÷ I × K ÷ T – R, then how is R related to P?
(a) Daughter's husband
(b) Son
(c) Brother
(d) Daughter's son

Q3. Directions: Study the following information carefully answer the given questions.
A + B means A is the mother of B.
A & B means A is the son of B.
A % B means A is the husband of B.
A @ B means A is the sister of B.

Q + S % T + V @ U then how is S related to U?
(a) Father
(b) Uncle
(c) Grandfather
(d) Brother

Q4. If C% D means C is the mother of D, C $ D means C is the wife of D, and if C & D means C is the son-in-law of D, then what does W % X $ Y & Z mean?
(a) W is the daughter of son of Z
(b) Z is wife of W
(c) Z is the daughter of W
(d) Z is the husband of W

Q5. If C% D means C is the wife of D; C & D means C is the father of D; and If C $ D means C is the daughter of D, then what would X $ Y % W & Z mean if W has only one daughter?
(a) X is the son of Z
(b) Z is the sister of X
(c) Z is the sister of the mother of X
(d) X is the sister of Z

Q6. If E% F means E is father of F, E & F means E is sister of F and E $ F means E is wife of F, then what does P $ R % S & Q mean, if R has only one daughter?
(a) Q is sister of P
(b) P is father of Q
(c) Q is daughter of P
(d) Q is son of P

Q7. If C $ D means C is the husband of D, C & D means C is the mother of D and C % D means C is the son of D, then what does X % Z $ W & Y mean if W has only one son?
(a) Y is the son of X
(b) Y is the brother of X
(c) X is the son of Y
(d) X is the brother of Y

SITTING ARRANGEMENT

TYPE 1

Q1. J, A, G, E, V and F are sitting around a roundtable facing the centre. F is to the immediate left of G, who is opposite A, V is between A and J. Who is to the left of E?

(a) V
(b) G
(c) A
(d) F

Q2. A, B, C, D, E and F are six friends sitting next to each other in a row of six seats in an auditorium. A is sitting to the immediate right of C. E is sitting on the last seat at the one end of the row. B is at the immediate right of A. F is at the last seat on the right side. D is sitting exactly between B and F. Who is sitting at the 3rd position from the left?

(a) A
(b) C
(c) D
(d) B

Q3. Six friends A, B, C, D, E, and F are sitting around a circular table. B is sitting to the immediate left of D. C is third to the right of E. A is between C and F. D is sitting to the immediate left of E. Who is sitting between A and E?

(a) F
(b) D
(c) C
(d) B

Q4. Six houses P, Q, R, S, T and U are located in two rows with three houses in each row. The houses in both the rows face each other. P is facing T. Q is not facing U. S is between P and U. Which three houses are in the same row?

(a) Q, R, T
(b) S, T, U
(c) P, Q, R
(d) P, S, T

Q5. Five animals are in their cages in a certain zoo. Their cages are in a row. Monkey is at the extreme end of the row. Cow is at the immediate left of Deer. Lion is at the extreme right end of the row. Fox is exactly between Deer and Lion. Which animal is at the second position from the left?

(a) Cow
(b) Fox
(c) Monkey
(d) Deer

Q6. Eight friends A, B, C, D, E, F, G and H are sitting clockwise at equal distances from each other in the same sequence around a circular table facing the centre. If D is facing southwest, then who is sitting third to the right of H?

(a) D
(b) E
(c) C
(d) F

Q7. Five students, J, K, L, M and N are sitting on a bench facing the blackboard. K is sitting to the immediate right of M, who is sitting at the extreme left. If J is to the immediate left of L but exactly right of N, then who is sitting in the middle of the bench ?

(a) L
(b) J
(c) N
(d) K

Q8. Mona, Kanak, John, Honey, Isha and Lara are watching a movie in a theater which has screen In the north. They are sitting in certain way.

(i) Only Kanak is sitting between Honey and John.
(ii) Lara is to the right of Mona who is sitting at extreme left.
(iii) Isha is to the immediate right of John.

Who is sitting between Kanak and Lara?

(a) Honey
(b) John
(c) Isha
(d) Mona

Q9. U, V, W, X, Y, and Z are seated in a circle facing the centre such that each one is facing another one. X is between Z and V. U is second to the left of X and second to the right of Y. Who is facing X?

(a) W
(b) Z
(c) Y

(d) U

Q10. V, X, Y and Z are playing cards. X is to the left of Y and V is to the right of Z. If X is facing West, which direction is V facing?
(a) North
(b) South
(c) West
(d) East

TYPE 2

Q1. G, H, I, J and K are sitting in a row. J is neither next to H nor K. J is NOT at the end. H is to the left of G. Who is the left of K?
(a) J
(b) H
(c) I
(d) G

Q2. Among eight houses A, B, C, D, E, F, G and H, four houses are situated at the corners of a square - shaped garden. The remaining four houses are situated in the middle of each side of the square. All houses face the centre of the square. B is between A and H. F is to the immediate left of G. D is to immediate left of C, which is to the immediate left of F. B and F are in the middle of the two sides facing each other. D is not adjacent to H. Which four houses are situated at the corners.
(a) C, D, E and G
(b) A, C, D and G
(c) A, C, G and H
(d) A, D, G and H

Q3. Seven persons A, B, C, D, E, F and G are sitting in a straight line facing north. B is sitting between F and A. G is to the immediate left of D. Two persons are sitting between A and D. C is to the immediate right of A. Two persons are sitting between B and E. Who is sitting between D and B?
(a) G
(b) A
(c) F
(d) C

Q4. Eight friends A, B, C, D, E, F, G and H are sitting anticlockwise around a circular table facing the centre of the table at equal distances between them. If G is sitting in the Southeast, then which pair of persons and direction that person is sitting in is NOT correct?
(a) H : West
(b) E : Southwest
(c) B : North
(d) C : Northwest

Q5. In a two wheeler showroom, seven bikes of different companies - L, M, N, O, P, Q and R are facing east in the following order:
Bike L is to the immediate right of R.
Bike R is fourth to the right of N.
Bike O is between two bikes M and Q
Bike N which is third to the left of M, is at one end,

Which of the bikes are on both the immediate sides of bike L?
(a) Bikes M and R
(b) Bikes N and O
(c) Bikes P and R
(d) Bikes M and O

Q6. Six kids are sitting in two rows facing north. Their names are Fuji, Ukain, Yam and Krish, Charlie, Mac. Fuji and Mac are sitting diagonally opposite. Ukain is in the top row and to the immediate right of Fuji. Krish is second to the left of Mac while Yam and Krish are not in the same row.
Who is sitting opposite to Charlie?
(a) Krish
(b) Ukain
(c) Yam
(d) Fuji

Q7. Five monkeys A, B, C, D, and E are sitting on a branch of a tree. C is sitting next to D. D is not sitting with E. E is on the left end of the branch. C is in the second position from the right. A is the immediate right of B and B is on the right side of E, and they are sitting together. Who is sitting at the center?
(a) D
(b) C
(c) A
(d) B

Q8. Seven friends O, P, Q, R, S, T and U are watching a movie sitting in a row. P is sitting at one extreme end. Q is sitting to the immediate left of S. P is sitting second to the right of T. U is not sitting at any extreme end. O is sitting between R and T. Who is sitting at the extreme left end?
(a) T
(b) Q
(c) R

(d) P

Q9. Eight friends A, B, C, D, E, F, G, and H are sitting around a circular table facing each other for a lunch. A is opposite F and third to the right of B. G is between F and D. H is to the left of D. E is between C and A. Who is sitting opposite C?

(a) D
(b) F
(c) B
(d) A

TYPE 3

Q1. Five people – A, B, C, D and E are standing in a line, one after the other, not necessarily in the same order. A is not standing either at the first or last position in the line. C is standing after one person only. There is only one person standing behind D. B is not standing at the last. Who stands at the last in the line?

(a) D
(b) C
(c) A
(d) E

Q2. Six friends A, B, C, D, E and F are watching hockey match sitting in a row. A and C are at extreme ends. E is between F and D, B is to the right of A and F is third to the left of C. Who is sitting at the second place from left in the row?

(a) D
(b) E
(c) F
(d) B

Q3. Six children A, B, C, D, E and F are standing in a line. F is to the left of A and right of B. D is between C and B. E is at one end. Who is between D and F?

(a) E
(b) A
(c) B
(d) C

Q4. Five phones, H, M, R, T and V, are kept one above the other (not necessarily in the same order). The number of phones above T is same as the number of phones below V. R is just above H. V is at the bottom. There are two phones between M and V. Which of the following phones are above R?

(a) M and T
(b) H and T
(c) M and V
(d) M and H

Q5. Six persons, L, M, N, P, Q and R, are sitting in a row facing towards the north (not necessarily in the same order). There are three persons between P and M. P is not at any of the ends. There are three persons between L and Q. N is to the left of R. L is at one of the ends. M is to the right of P. How many person are sitting to the left of N?

(a) 4
(b) 1
(c) 3
(d) 2

Q6. Seven girls, Anika, Mini, Preeti, Priya, Gauri, Lovi and Richa are sitting in the last row in a classroom. Mini is sitting third from the extreme left end and second to the left of Richa. Lovi is sitting to the immediate right of Richa and fourth to the right of Anika. If Preeti and Gauri are sitting at the two extreme ends, then who is sitting to the immediate left of Priya?

(a) Richa
(b) Lovi
(c) Mini
(d) Anika

Q7. Five members of a family, P, Q, R, S, and T are watching a movie sitting in a row. P is sitting in the middle, while R is sitting between P and T. If Q is sitting at the extreme left end, at what position from left is S sitting?

(a) Second
(b) Third
(c) Fourth
(d) Fifth

Q8. Direction: Read the following paragraph carefully and answer the question given below:

Six persons A, D, E, M, R and S are sitting in a row facing North. D sits third to the left of A. M sits to the immediate left of S who sits at one of the extreme ends. R sits third to the left of M.

What is the position of M with respect to D?

(a) Fourth to the right
(b) Second to the left
(c) Fourth to the left
(d) Second to the right

Q9. Seven friends O, P, Q, R, S, T and U are watching a cricket match sitting in a stadium. P is sitting at one extreme end. T is sitting between Q and U, and R is sitting to the immediate right of S and immediate left of Q. U is sitting second to the left of P. Who is sitting second to the left of T?

(a) P
(b) U
(c) R
(d) Q

Q10. Five students are sitting in a row. Deepika is sitting on the immediate right of Kapil. Salman is not adjacent to Ranbir, Kareena or Kapil. Kapil is in the centre of the row. Ranbir is at one of the ends. Who is sitting at the immediate left of Kapil?

(a) Salman
(b) Kareena
(c) Ranbir
(d) Deepika

Q11. Seven friends O, P, Q, R, S, T and U are watching a movie sitting in a row. P is sitting at one extreme end. Q is sitting to the immediate left of S. P is sitting second to the right of T. U is not sitting at any extreme end. O is sitting between R and T. Who is sitting at the extreme left end?

(a) T
(b) Q
(c) R
(d) P

TYPE 4

Q1. Eight people - L, M, N, O, P, Q, R and S are sitting around a circular table facing towards centre at equal distances. P is sitting third to the left of O who is sitting second to the left of L. Neither L nor P is an immediate neighbour of M. R is sitting sixth to the left of Q. N is sitting third to the right of Q.

What is the position of S with respect to N?

(a) Second to the left of N
(b) Second to the right of N
(c) Third to the left of N
(d) Fourth to the left of N

Q2. Six friends – P, Q, R, S, T, U are sitting around a circular table facing the centre. S is sitting 3rd to the left of T who is sitting 2nd left of U. U is 3rd to the right of P. Q is not a neighbour of S.

Who is sitting adjacent to R?

(a) U
(b) S
(c) T
(d) Q

Q3. Direction: Read the following information carefully and answer the questions given below.

Seven persons P, Q, R, D, T, U, and V are sitting in a circular arrangement. All of them are facing inside. U is sitting second to the right of V. Q is the neighbour of U but not of R. T is a neighbour of R and is siting fourth to the right of V. D is sitting between T and P.

Who is the neighbour of U?

(a) T and R
(b) U and Q
(c) P and Q
(d) R and Q

Q4. Six friends A, B, C, D, E and F are sitting in a circle facing the center, F is to the immediate left of A and B is sitting opposite to E. A and D are sitting opposite to each other. Who is sitting second to the right of F?

(a) Either B or E
(b) Either B or D
(c) C
(d) D

Q5. Six film stars – Alia, Kartik, Salman, Ranveer, Deepika and Kriti are sitting around a circular table facing outside the center. Kriti is second to the right of Alia who is not the immediate neighbour of Ranveer or Salman. Kartik is sitting to the immediate right of Ranveer. Deepika is sitting between which of the following pair?

(a) Ranveer, Kriti
(b) Alia, Kartik
(c) Alia, Kriti
(d) Salman, Ranveer

Q6. Six persons A, B, C, D, E and F are sitting around a circular table facing towards centre. C sits second to the right of F. E and A faces each other. A sits immediate right of D. Who among the following is immediate neighbour of F?

(a) C
(b) D
(c) A
(d) B

TYPE 5

Q1. Usha, Damini, Amisha, Manju, Lalita and Harshita are sitting around a round table facing the centre. Usha is opposite Damini, who is to the right of Manju, Usha is between Amisha and Harshita, Harshita is not next to Manju. Who is to the right of Lalita?

(a) Damini
(b) Harshita
(c) Manju
(d) Usha

Q2. Six friends, C, E, G, I, K and M, are sitting around a circular table facing towards the centre and at equal distance from each other (not necessarily in the same order). E is second to the right of C. K is to the immediate right of G. G and I are facing towards each other. Moving towards the left of I, how many friends are sitting between I and M?

(a) 0
(b) 3
(c) 1
(d) 2

Q3. Six friends P, Q, R, S, T and U are sitting at a circular table facing the centre. S is sitting third to the left of T. R is not sitting between T and U. S is not the immediate neighbour of R. Q is seated second to the right of T and U is sitting second to the left of T. Who is sitting between U and Q?

(a) S
(b) R
(c) P
(d) T

Q4. Eight friends A, B, C, D, E, F, G, and H are sitting around a circular table facing each other for a lunch. A is opposite F and third to the right of B. G is between F and D. H is to the left of D. E is between C and A. Who is sitting opposite C?

(a) D
(b) F
(c) B
(d) A

Q5. Eight friends A, B, C, D, E, F, G and H are sitting around a circular table facing each other for a lunch. A is opposite F and third to the right of B. G is between F and D. H is to the left of D. E is between C and A. Who is sitting second to the left of C?

(a) D
(b) F
(c) B
(d) A

Q6. Five girls, Gita, Kusum, Priya, Riya and Tiya, are sitting around a circular table facing towards the centre (not necessarily in the same order). Riya is third to the right of Kusum. Priya and Gita are the immediate neighbours of Riya. Tiya is to the immediate left of Priya. Who is sitting second to the right of Gita?

(a) Tiya
(b) Priya
(c) Kusum
(d) Riya

Q7. Six friends A, B, C, D, E and F are sitting around a roundtable facing the centre. C is seated between A and B, who is to the immediate left of D. If C is facing E, who is facing F?

(a) E
(b) A
(c) D
(d) B

Q8. There are 8 houses in a line and in each house only one boy lives with the conditions as given below:

1. Jack is not the neighbour Siman.
2. Harry is just next to the left of Larry.
3. There is at least one to the left of Larry.
4. Paul lives in one of the two houses in the middle.
5. Mike lives in between Paul and Larry.

If at least one lives to the right of Robert and Harry is not between Taud and Larry, then which one of the following statement is not correct?

(a) Robert is not at the left end.
(b) Robert is in between Simon and Taud.
(c) Taud is in between Paul and Jack.
(d) There are three persons to the right of Paul.

Q9. A, B, C, D and E are sitting on a bench. A is sitting next to B, C is sitting next to D, D is not sitting with E who is on the left end of the bench. C is on the second position from the right. A is to the right of B and E. A and C are sitting together. In which position A is sitting?

(a) Between B and D
(b) Between B and C
(c) Between E and D
(d) Between C and E

Q10. There are 10 persons sitting in a circle facing each other. A and J are sitting opposite to each other, whereas F and H are sitting opposite to each other. A and I are sitting to the immediate right and immediate left to B, respectively. H is sitting in between I and D.

On the basis if given information, which of the following is correct?

(a) D is sitting to the immediate right of C
(b) G is sitting beside D
(c) I is sitting between H and B
(d) J is sitting between A and F

SERIES (PART – 1)

TYPE 1

Q.1) A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.
PIG, TMK, XQO, ?, FYW
(a) CAR
(b) CVT
(c) BUS
(d) DWU

Q.2) XJ, WL, VN, UP, ?
(a) TU
(b) TR
(c) ST
(d) SU

Q.3) GX, JU, MR, PO, ?
(a) SK
(b) SL
(c) RM
(d) RL

Q.4) YB, PD, IF, ?, AJ
(a) GK
(b) HI
(c) JI
(d) DH

Q.5) AZA, DWD, GTG, JQJ, ?
(a) IMI
(b) KLK
(c) KMK
(d) MNM

Q.6) DCA, HGE, ?, POM, TSQ
(a) LKI
(b) KJH
(c) MLJ
(d) LNO

Q.7) AAA, BCX, CEU, ?, EIO
(a) DGR
(b) IDW
(c) FDG
(d) HIJ

TYPE 2

Q.1) EM, GO, IQ, KT, MU
(a) KT
(b) EM
(c) GO
(d) MU

Q.2) E, J, O, U, Y
(a) U
(b) E
(c) J
(d) Y

Q.3) PULD, SWOF, VYRH, YAUJ, ?
(a) BCXL
(b) XALM
(c) XLKC
(d) DEXL

Q.4) ABCD, BDFH, CFIL, DHLP, EJPT
(a) BDFH
(b) EJPT
(c) DHLP
(d) ABCD

Q.5) MNLO, OLKP, QJJQ, RIIR, UFHS
(a) OLKP
(b) RIIR
(c) TGHS
(d) QJJQ

Q.6) BS, EO, HK, __, NC
(a) LN
(b) KG
(c) JH
(d) QA

Q.7) U, Z, E, ?, O, T, Y
(a) I
(b) K

(c) L
(d) J

Q.8) Select the option in which the letters the same relationship as that shared by the given pair of letters.
DP : FR
(a) DJ : BH
(b) JZ : HB
(c) LQ : NU
(d) MA : OC

Q. 9) Hello, Lofty, Tyre, Repair, ?
(a) Tonic
(b) Ironic
(c) Panic
(d) Paired

Q.10) 144 : 9 :: 256 : ?
(a) 13
(b) 10
(c) 11
(d) 9

Q.11) Select the letter-pair that can replace the question mark (?) in the following series.
RD, XJ, DP, JV, ?
(a) PC
(b) QB
(c) QC
(d) PB

TYPE 3

Select the combination of letters that when sequentially placed in the gaps of the given letter series will complete the series.

Q.1) J_KTP_TK_PJT_TP
(a) KTPT
(b) TTJP
(c) TTJK
(d) TJTK

Q.2) FLU, GNX, HPA, IRD, JTG, ?
(a) KUH
(b) LWK
(c) KWJ
(d) KVJ

Q.3) O, B, L, C, I, D, F, E, ?
(a) N
(b) H
(c) K
(d) C

Q.4) DAG, FCI, ? JGM, LIO
(a) HEK
(b) IFL
(c) HKE
(d) GDJ

Q.5) PQA : 272 :: LMB : ?
(a) 123
(b) 321
(c) 231
(d) 312

Q.6) GREAT : 25 :: NATURE : ?
(a) 92
(b) 38
(c) 36
(d) 59

Q.7) $\frac{M}{AC} : \frac{N}{AD} :: \frac{O}{AE} : \_\_\_\_\_$
(a) $\frac{P}{AF}$
(b) $\frac{Q}{AB}$
(c) $\frac{P}{AC}$
(d) $\frac{R}{AD}$

Q.8) $\frac{ABC}{F} : \frac{BCD}{I} :: \frac{CDF}{L} : \_\_\_\_\_$
(a) $\frac{DEF}{Q}$
(b) $\frac{DEF}{N}$
(c) $\frac{EDF}{Q}$
(d) $\frac{DEF}{M}$

Q.9) ab, ba, abc, cba, abcd, (…)
(a) acbd
(b) dcba
(c) bacd
(d) cabd

Q.10) EQ, FP, HO, ?, OM, TL
(a) GN

(b) JM
(c) KN
(d) LO

Q.11) If the following set of letters are sequentially placed at the gaps in the given letter series, then which one will complete the series?
x_z_zxx_yzx_zy_
(a) zyxyx
(b) yxzxy
(c) xzyzz
(d) xyzxz

Q.12) I, HA,_____, CBD, DBC.
(a) AH
(b) HHA
(c) GAJ
(d) GKR

Q.13) ac_d_b_cbdd_a_bddb
(a) bdcab
(b) bdabc
(c) cbdbc
(d) bdbca

Q.14) a_b_aad_ca_dbc_adb_a
(a) dbcaca
(b) dcabac
(c) dcabca
(d) dcbaac

Q.15) abc_dab_ _d_b_cdab_c_
(a) acacdcc
(b) cacacdc
(c) ccaacdc
(d) cccaccd

Q.16) T Q _ A _ T _ N A _ _ Q N _ F
(a) FNAQTF
(b) NTFTAQ
(c) FQBATT
(d) NFQFTA

Q.17) _ aa _ ba _ bb _ ab _ aab
(a) babab
(b) aaabb
(c) bbaab
(d) bbbaa

TYPE 4

Q.1) Chaudhary Brahm Prakash, Gurmukh Nihal Singh, Madan Lal Khurana, ?
(a) Sushma Swaraj
(b) Sahib Singh Verma
(c) Sheila Dixit
(d) Bansi Lal

Q.2) a_ _bba_cb_ab_bb
(a) bcbbc
(b) bcaab
(c) aacbc
(d) abaca

Q.3) Apple, Guava, Mango,_____?
(a) Fig
(b) Tomato
(c) Grape
(d) Banana

Q.4) zxyaxybxyc, czxydxyexy, fxzygxyhxy, gxyzhxyixyoxy, jxykzxylxykxy, ?
(a) lxyozxymxynx
(b) xyzxyxyop
(c) xyoxyzmxyp
(d) xytzyuxyb

Q.5) 1A26, 5E22, ?, 15O12, 21U6
(a) 9I18
(b) 10J17
(c) 9H17
(d) 12L15

Q.6) abca__bcaa__bca__bbc__a
(a) ccaa
(b) bbaa
(c) abac
(d) abba

Q.7) 13, 17, ?, 28, 35, 43
(a) 20
(b) 22
(c) 25
(d) 26

Q.8) 15, 21, 28, 34, ?, 47
(a) 41
(b) 40
(c) 44
(d) 43

Q.9) 16, 26, 38, 52, ?, 86
(a) 68
(b) 64
(c) 79
(d) 76

Q.10) 100, 99, 96, 91, 84, 75, 64, _____
(a) 51
(b) 47
(c) 49
(d) 53

Q. 11) 2 , 6 , 24 , 60 , 120 , 720 , ??
(a) 5864
(b) 5760
(c) 1149
(d) 1440

Q.12) 589654237, 89654237, 8965423, 965423, ?
(a) 58965
(b) 65423
(c) 89654
(d) 96542

Q.13) 8, 29, 113, 449, __?___
(a) 673
(b) 984
(c) 1484
(d) 1793

Q.14) 1, 3, 7, 13, 21, ?
(a) 29
(b) 30
(c) 31
(d) 32

SERIES (PART-II)

TYPE 1

Q.1) 6930, 630, 90, 15, 6, 3
(a) 90
(b) 15
(c) 6
(d) 3

Q.2) 2, 12, 18, 48, 50, 72
(a) 72
(b) 48
(c) 50
(d) 12

Q.3) 72, ?, 42, 30
(a) 50
(b) 64
(c) 56
(d) 48

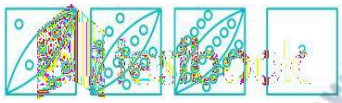
Q.4) 20, 15, 21, 17, 26, 10.
(a) 17
(b) 10
(c) 21
(d) 15

Q.5) 16, 24, 36, ?, 81
(a) 52
(b) 54
(c) 61
(d) 58

Q.6) 20 : 480 :: 25 : ?
(a) 700
(b) 725
(c) 655
(d) 625

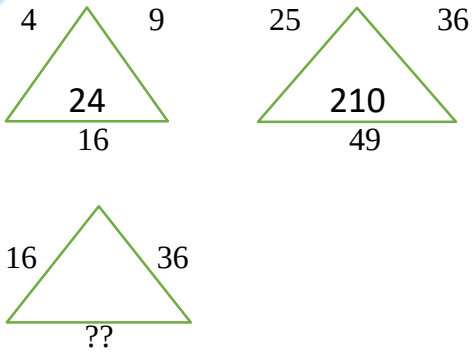
TYPE 2

Q.1)



(a) 
(b) 
(c) 
(d) 

Q.2)



(a) 48
(b) 64
(c) 36
(d) 50

Q.3) S42W, X26B, C10G, H30L, M30Q
(a) S42W
(b) X26B
(c) C10G
(d) H30L

Q.4) D2V, G5S, J10P, M17M, P26J,?
(a) S37G
(b) S34G
(c) S50G
(d) S48G

Q.5) MF19, RK29, WP39, ?
(a) BM23
(b) BU23
(c) BU19
(d) BW19

Q.6) A7, C7, F21, M42, U168
(a) C7
(b) F21
(c) M42
(d) U168

Q.7) F6L, N7U, P9Y, R8Z, ?
(a) H7T
(b) R5T
(c) Q3T
(d) B9T

Q.8) F20, 9Q, L14, 15K,?
(a) 8R
(b) 16H
(c) R8
(d) 18G

Q.9) 12S, 14R, 18Q, 26M, 42I
(a) 14R
(b) 18Q
(c) 42I
(d) 26M

Q.10) AC4, BE7, EI14, ?, QW40
(a) MH10
(b) JL63
(c) JQ30
(d) JO25

Q.11) My Space, Facebook, Twitter, ?, Instagram
(a) Pinterest
(b) Snapchat
(c) Grindr
(d) Tinder

Q.12) Troposphere, Stratosphere, Mesosphere, ?
(a) Exosphere
(b) Thermosphere
(c) Tropopause
(d) Ozone Layer

Q.13) Maurya, Shunga, Kanva, Pandyan?
(a) Kuru
(b) Mamvadi
(c) Arsakes
(d) Itravasu

Q.14) Neptune, Uranus, Saturn, Jupiter, ?
(a) Mercury
(b) Earth
(c) Mars
(d) Venus

Q.15) Ant, Bee, Moth, Midge, ?
(a) Scorpions
(b) Ticks
(c) Mites
(d) Cockroach

Q.16) JOE: GLB:: RDY: OAV :: PGL : ?
(a) SJO
(b) MDO
(c) MDI
(d) SJI

Q.17) UZM, QVQ, MRU, ?, EJC
(a) GZX
(b) INY
(c) MQC
(d) RWU

Q.18) The following question is based on the given words

PLAN FORE RAMP RANG SAND

If in each word, the fourth letter is changed to the next letter in the English alphabetical order, how many letter clusters thus formed will have two vowels?
(a) Two
(b) Three
(c) None
(d) One

Q. 19) A_ _BD_CEB_ _ CEB_
(a) CEADAD
(b) CDADEA
(c) CADADE
(d) CDAEAD

Q.20) 86, 89, 95, 104, ??, 131, 149

(a) 122
(b) 116
(c) 114
(d) 113

Q.21) How many even numbers are there in the sequence which are immediately followed by an odd number?
4 6 7 8 3 3 4 5 7 6 8 9 2 7 9 1 3 5 2
(a) five
(b) six
(c) three
(d) four

Q.22) 6, 12, 18, 36, 54, 108, ?
(a) 162
(b) 168
(c) 152
(d) 154

Q.23) C_ B N _ _ V _ _ H C _ B _ H
(a) VCBHNVN
(b) VHBNCHV
(c) HVCNBVN
(d) VHCBNVN

Q.24) 3, 4, 10, 33, 136, ?
(a) 685
(b) 683
(c) 686
(d) 682

Q.25) 675, 580, 471, 348, 211, ?
(a) 59
(b) 57
(c) 61
(d) 60

Q.26) 7, 6, 13, 38, 153, ?
(a) 764
(b) 765
(c) 762
(d) 761

Q.27) 235, 190, 155, ? , 115, 110
(a) 130
(b) 125
(c) 145
(d) 120

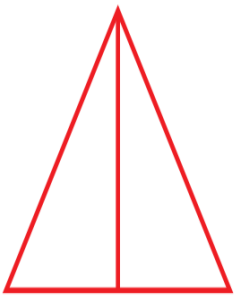
Q.28) 152, 223, 300, 383, 472, ?
(a) 567
(b) 587
(c) 597
(d) 577

Q.29) Four of the following five are alike in a certain way and so form a group. Which one is odd?
Ears, Eyes, Nose, Lips, Toes
(a) Toes
(b) Lips
(c) Nose
(d) Ears

Q.30) 600, ? , 300, 100, 25, 5
(a) 200
(b) 500
(c) 400
(d) 600

COUNT THE FIGURE

Q.1)



(a) 1
(b) 2
(c) 3
(d) 4

Q.2)

(a) 3
(b) 4
(c) 5
(d) 6

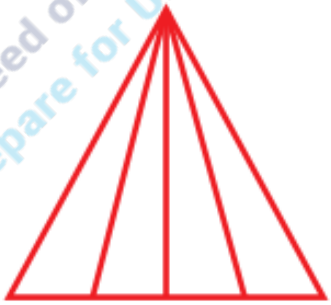
Q.3)

(a) 6
(b) 8
(c) 12
(d) 15

Q.4)

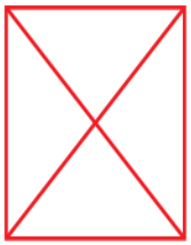
(a) 15
(b) 20
(c) 25
(d) 30

Q.5)



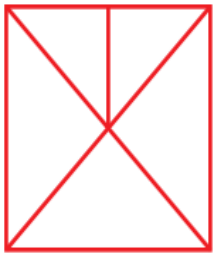
(a) 4
(b) 5
(c) 8
(d) 10

Q.6)



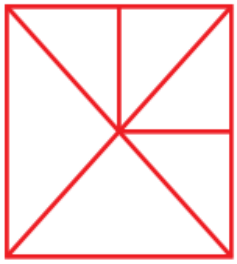
(a) 5
(b) 6
(c) 7
(d) 8

Q.7)



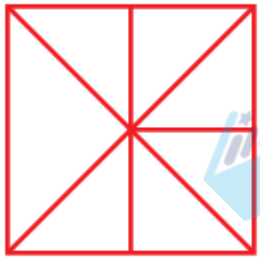
(a) 6
(b) 7
(c) 8
(d) 10

Q.8)



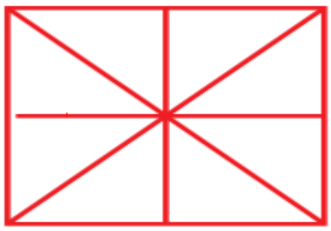
(a) 10
(b) 12
(c) 14
(d) 16

Q.9)



(a) 12
(b) 14
(c) 16
(d) 18

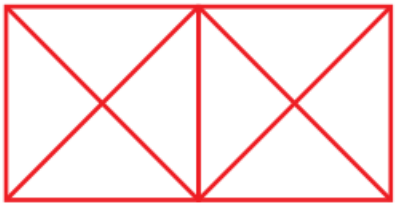
Q.10)



(a) 14
(b) 16
(c) 18
(d) 20

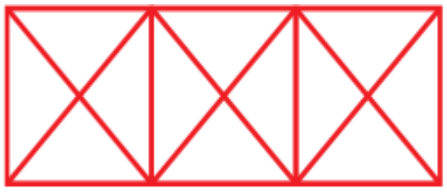
Q.11)

(a) 4
(b) 6
(c) 8
(d) 10



(a) 14
(b) 16
(c) 18
(d) 20

Q.13)



(a) 28

(b) 34
(c) 36
(d) 38

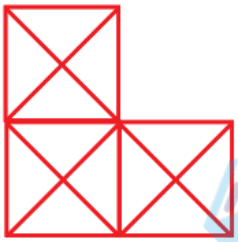
Q.14)

(a) 32
(b) 34
(c) 36
(d) 38

Q.15)

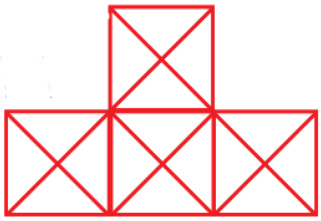
(a) 40
(b) 42
(c) 44
(d) 48

Q.16)



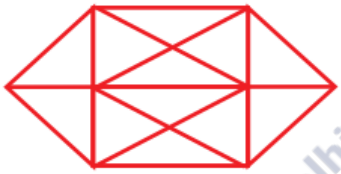
(a) 24
(b) 25
(c) 28
(d) 29

Q.17)



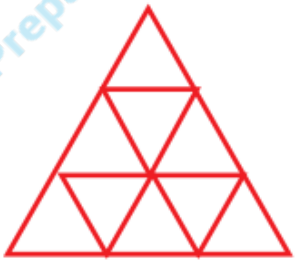
(a) 38
(b) 39
(c) 40
(d) 41

Q.18)



(a) 20
(b) 24
(c) 28
(d) 32

Q.19)



(a) 9
(b) 11
(c) 13
(d) 15

Q.20)

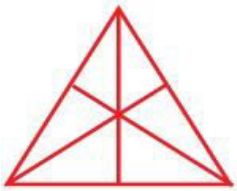
(a) 27
(b) 21

(d) 23
(d) 25

Q.21)

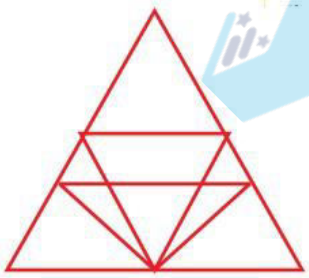
(a) 4
(b) 6
(c) 8
(d) 10

Q.22)



(a) 10
(b) 12
(c) 14
(d) 16

Q.23)

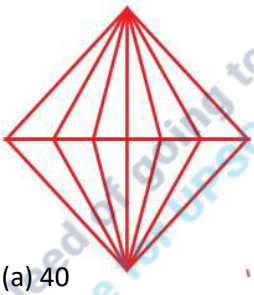


(a) 10
(b) 12
(c) 14
(d) 18

Q.24)

(a) 20
(b) 24
(c) 26
(d) 28

Q.25)

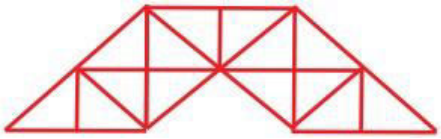


(a) 40
(b) 42
(c) 46
(d) 48

Q.26)

(a) 18
(b) 20
(c) 22
(d) 24

Q.27)



(a) 27
(b) 23
(c) 31
(d) 29

Q.28)

(a) 24
(b) 28
(c) 26
(d) 20

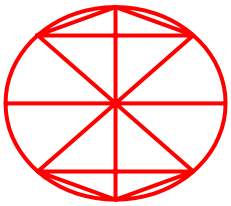
Q.29)

(a) 12
(b) 14
(c) 16
(d) 10

Q.30)

(a) 12
(b) 14
(c) 16
(d) 18

Q.31)

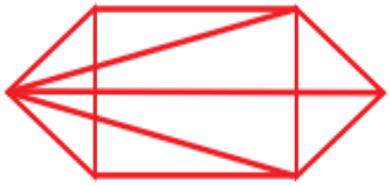


(a) 16
(b) 6
(c) 22
(d) 24

Q.32)

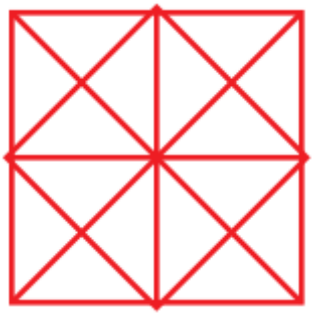
(a) 34
(b) 38
(c) 44
(d) 48 or more

Q.33)



(a) 11
(b) 14
(c) 16
(d) 22

Q.34)

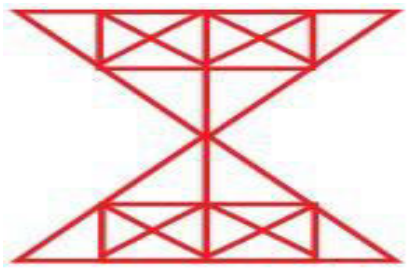


(a) 44
(b) 16
(c) 18
(d) 28

Q.35)

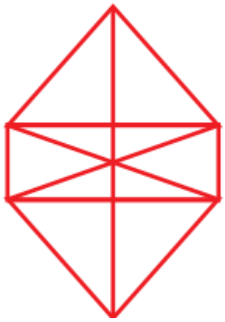
(a) 11
(b) 7
(c) 8
(d) 6

Q.36)



(a) 48
(b) 60
(c) 56
(d) 52

Q.37)

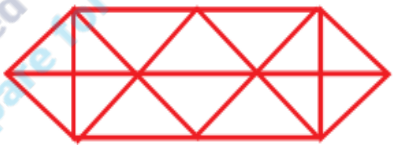


(a) 20
(b) 22
(c) 28
(d) 32

Q.38)

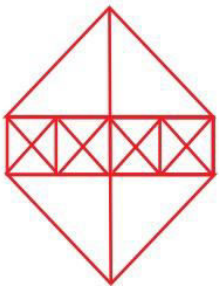
(a) 4
(b) 5
(c) 6
(d) 7

Q.39)



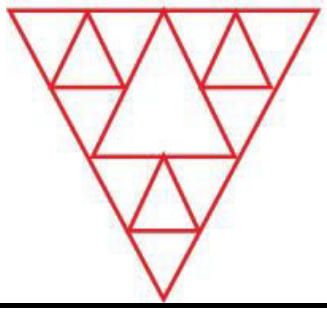
(a) 24
(b) 14
(c) 28
(d) 20

Q.40)



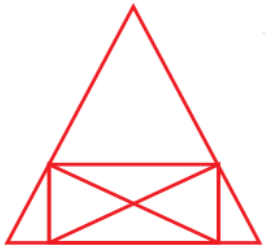
(a) 38
(b) 44
(c) 46
(d) 54

Q.41)



(a) 13
(b) 14
(c) None
(d) 17

Q.42)



(a) 14
(b) 10
(c) 12
(d) 8

Q.43)

(a) 18
(b) 28
(c) 20
(d) 24

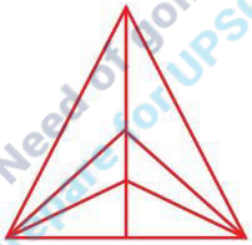
Q.44)

(a) 8
(b) 10
(c) 12
(d) 14

Q.45)

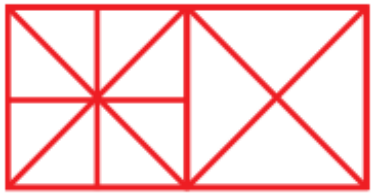
(a) 18
(b) 24
(c) 26
(d) 28

Q.46)



(a) 13
(b) 14
(c) 12
(d) 15

Q.47)



(a) 24
(b) 26
(c) 28
(d) 30

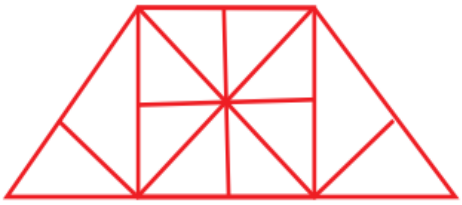
Q.48)

(a) 14
(b) 12
(c) 16
(d) 20

Q.49)

(a) 7
(b) 8
(c) 9
(d) 11

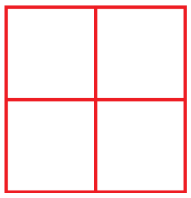
Q.50)



(a) 18
(b) 20
(c) 24
(d) 25

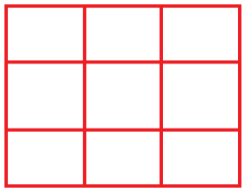
SQUARE

Q.1)



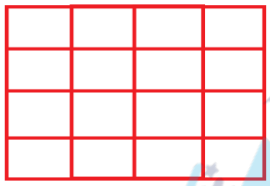
(a) 1
(b) 4
(c) 5
(d) 6

Q.2)



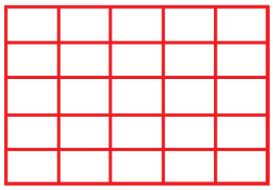
(a) 9
(b) 10
(c) 12
(d) 14

Q.3)



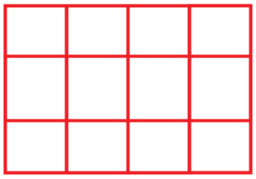
(a) 16
(b) 17
(c) 28
(d) 30

Q.4)



(a) 25
(b) 26
(c) 48
(d) 55

Q.5)

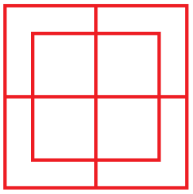


(a) 12
(b) 14
(c) 16
(d) 20

Q.6)

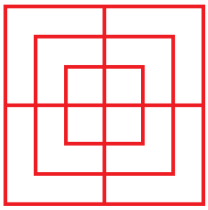
(a) 20
(b) 30
(c) 40
(d) 50

Q.7)



(a) 7
(b) 12
(c) 8
(d) 10

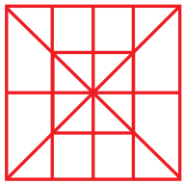
Q.8)



(a) 8
(b) 12
(c) 15
(d) 18

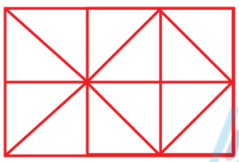
Q.9) How many squares are there in Chess Board?
(a) 64
(b) 65
(c) 200
(d) 204

Q.10)



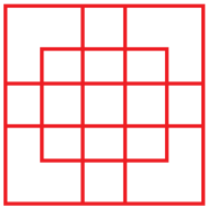
(a) 13
(b) 16
(c) 19
(d) 20

Q.11)



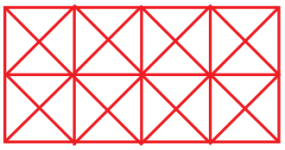
(a) 6
(b) 7
(c) 9
(d) 10

Q.12)



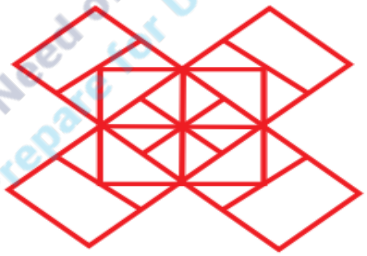
(a) 18
(b) 19
(c) 25
(d) 27

Q.13)



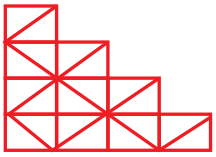
(a) 11
(b) 21
(c) 24
(d) 26

Q.14)



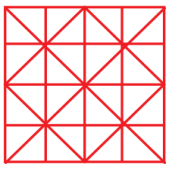
(a) 22
(b) 20
(c) 18
(d) 14

Q.15)



(a) 10
(b) 11
(c) 12
(d) 14

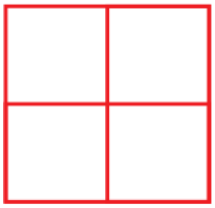
Q.16)



(a) 26
(b) 30
(c) 35
(d) 38

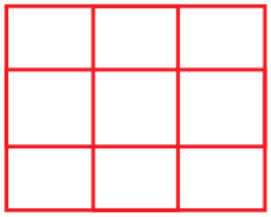
RECTANGLE

Q.1)



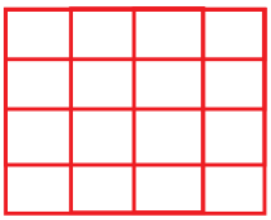
(a) 4
(b) 5
(c) 7
(d) 9

Q.2)



(a) 9
(b) 10
(c) 12
(d) 36

Q.3)

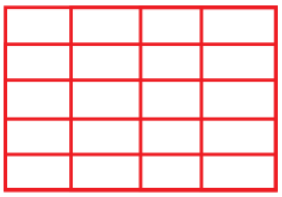


(a) 16
(b) 50
(c) 80
(d) 100

Q.4)

(a) 9
(b) 10
(c) 60
(d) 80

Q.5)



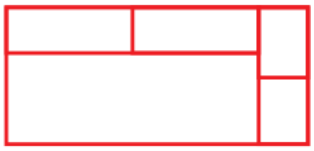
(a) 110
(b) 130
(c) 150
(d) 170

Q.6)

(a) 18
(b) 7
(c) 19

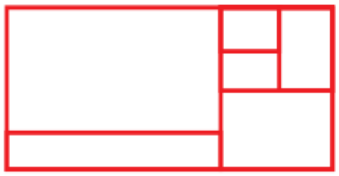
(d) 11

Q.7)



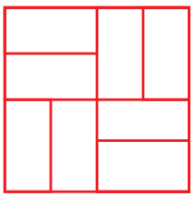
(a) 6
(b) 9
(c) 8
(d) 7

Q.8)



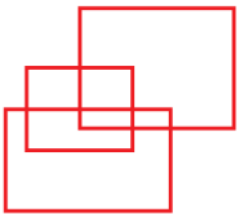
(a) 11
(b) 12
(c) 9
(d) 10

Q.9)



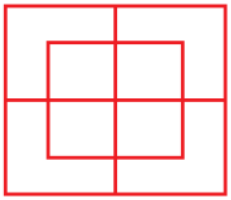
(a) 24
(b) 17
(c) 21
(d) 14

Q.10)



(a) 9
(b) 10
(c) 11
(d) 12

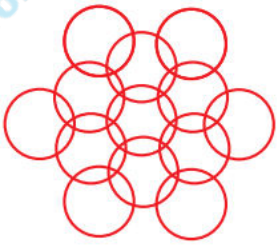
Q.11)



(a) 6
(b) 4
(c) 10
(d) 10 or more

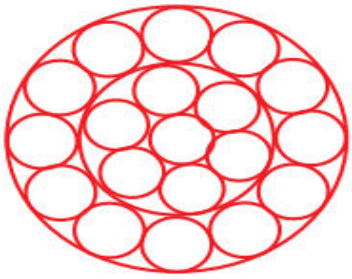
CIRCLES

Q.1)



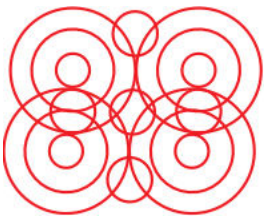
(a) 11
(b) 12
(c) 13
(d) 14

Q.2)



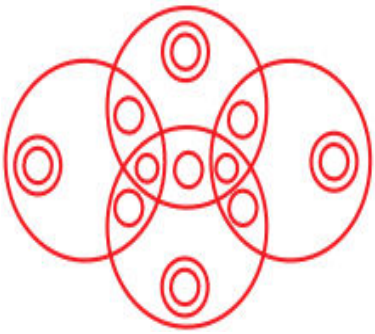
(a) 19
(b) 18
(c) 17
(d) 21

Q.3)



(a) 14
(b) 16
(c) 17
(d) 18

Q.4)



(a) 19
(b) 13
(c) 17
(d) 22

THEORY CUBE

Important Facts

- A cube has 6 square faces or sides
- A cube has 8 points (vertices)
- A cube has 12 edges
- Only 3 sides of a cube are visible at a time (known as "Joint Sides") and these sides can never be on the opposite side of each other
- Things that are shaped like a cube are often referred to as 'cubic'
- Most dice are cube shaped, with the numbers 1 to 6 on the different faces.

Basic Rules for Dice

There are certain dice rules in reasoning which can be used to solve dice-based questions:

Rule No. 1:
Two opposite faces of the dice cannot be adjacent to each other.

Rule No. 2:
If two dice are as shown below, and one of the two common faces (Face number 4) is in the same position, then the remaining faces will be opposite to each other.

Rule No. 3:
If in 2 different positions of the dice, the positions (different), the position of the face that's common is the same, and then the opposite faces of the faces that remain will be in the same positions.

Rule No. 4:
If 2 positions of a die are given (Different) and it is also stated that the common face is different then the face opposite to the given common face would be that which is not shown on any given face in the 2 given positions. It is also to be noted that the opposite face of the faces that are left cannot be the same.

Cubes

For a cube of side n x n x n painted on all sides which is uniformly cut into smaller cubes of dimension 1 x 1 x 1,

- Number of cubes with 0 side painted= $(n-2)^3$
- Number of cubes with 1 sides painted = $6(n-2)^2$
- Number of cubes with 2 sides painted = 12(n-2)
- Number of cubes with 3 sides painted= 8(always)

Cuboid:

All the edges of Cuboid are Not Equal. i.e Measures of Length , breadth and height are not equal.

A Cuboid is made up of six rectangles, each of the rectangle is called the face.

Formulas for Cuboid:

- For a cuboid of dimension a x b x c painted on all sides which is cut into smaller cubes of dimension 1 x 1 x 1,
- Number of cubes with 0 side painted = (a-2) (b-2) (c-2)
- Number of cubes with 1 sides painted = 2[(a-2) (b-2) + (b-2)(c-2) + (a-2)(c-2)]
- Number of cubes with 2 sides painted = 4(a+b+c -6)
- Number of cubes with 3 sides painted = 8

CUBE AND DICE

TYPE 1

Q1. Which of the following cube in the answer figure cannot be made based on the unfolded cube in the question figure?

(a) (b) (c) (d)

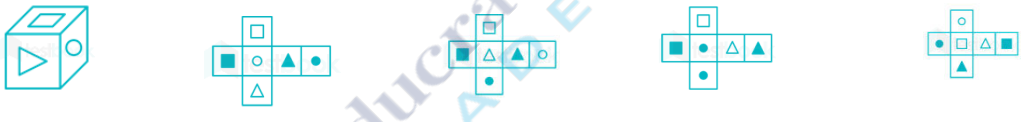
Q2.

(a) (b) (c) (d)

Q3.

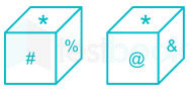
(a) (b) (c) (d)

Q4. From the given options, choose the sheet of paper which can form the given cube?



(a) (b) (c) (d)

Q5. Which sides of the dice will be adjacent to symbol *?



(a) @, # and %
(b) @ and &
(c) #, & and %
(d) #, %, @ and &

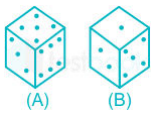
Q6. Three different positions of a dice are shown below. Which number appears on the face opposite the number 4?

(a) 3
(b) 2
(c) 6
(d) 5

Q7. Three different positions of a dice are shown below. Which number appears on the face opposite the number 6?

(a) 4
(b) 5
(c) 2
(d) 1

Q8. Two positions of a Dice are shown below:



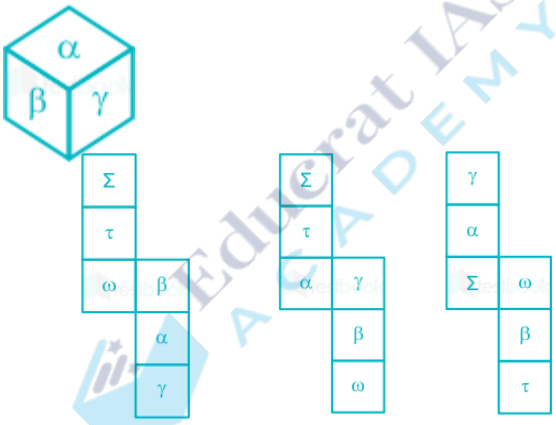
When 5 is at the bottom, what will be at the top?
(a) 2
(b) 5
(c) 1
(d) 4

Q9. Three different positions of a dice are shown below. Which number appears on the face opposite number 3?

(a) 6
(b) 5
(c) 2
(d) 4

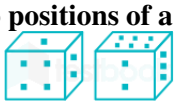
TYPE 2

Q1. The below cube can be created by folding the sheet of paper given in one of the options. Choose the correct answer.



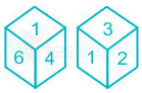
(a) (b) (c) (d)

Q2. Two positions of a dice are shown below. When there are five dots at the top, how many dots will be at the bottom?



(a) 1
(b) 2
(c) 6
(d) 3

Q3. Two different positions of the same dice are shown below, the six faces of which are numbered 1 to 6. Find the number on the face opposite to the one having '5'.



(a) 1
(b) 3
(c) 2
(d) 4

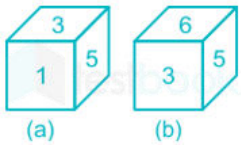
Q4. A Cube is coloured blue on all the faces. It is then cut into 64 smaller cubes. These cubes are now separated. The number of smaller cubes with no surface coloured is:

(a) 4
(b) 8
(c) 16
(d) 12

Q5. Based on the figure, which alphabet placed at the position opposite to D?

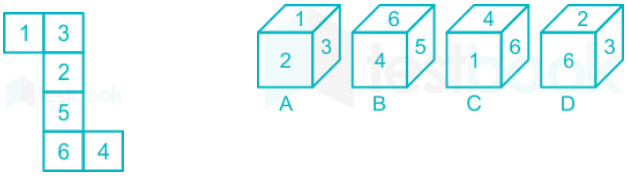
(a) B
(b) D
(c) A
(d) C

Q6. Two positions of the same dice are shown. Select the number that will be on the face opposite to the one showing 6.



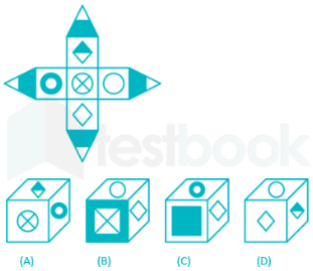
(a) 1
(b) 3
(c) 5
(d) 4

Q7. Select the dice that can be formed by folding the given sheet along the lines.



(a) Only A and B
(b) Only B and D
(c) Only A
(d) Only A, B and C

Q8. Which of the cubes from the given options can be made from the below sheet of paper?



(a) Only A & B
(b) Only A & C
(c) Only C & D
(d) None

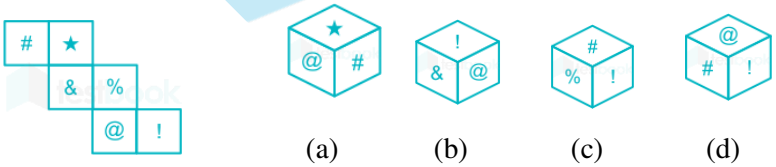
Q9. A cube coloured pink on all faces is cut into 27 small cubes of equal sizes. How many cubes are painted on one face only?
(a) 4
(b) 8
(c) 3
(d) 6

TYPE 3

Q1. Three positions of the same cube are given. Which symbol will be at the top if '^' is at the bottom?

(a) @
(b) &
(c) *
(d) #

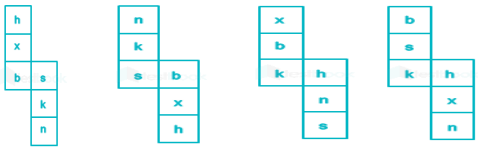
Q2. Find the dice that can be formed if we fold this open cube.



Q3. Two different positions of the same dice are shown which have six faces marked as A, B, C, D, E and F. Which alphabet will be at the top if D is at the bottom?

(a) B
(b) C
(c) E
(d) F

Q4. The below cube can be created by folding the sheet of paper in one of the options. Choose the correct answer.



(a) (b) (c) (d)

Q5. Which of the following cubes in the answer figures cannot be made based on the unfolded cube in the question figure?

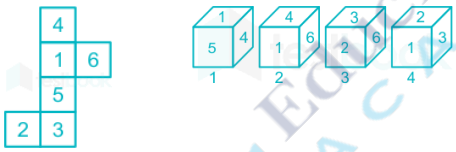
(a) (b) (c) (d)

Q6. Study the following information carefully and answer the question based on it.

If four, one and one cuts are made parallel to different faces of a cube, Then what is the number of identical pieces obtained?

(a) 4
(b) 16
(c) 20
(d) 12

Q7. Which of the following patterns of the dice can be formed when the sheet given below is folder?

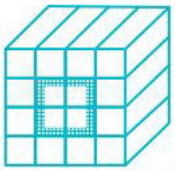


(a) Only 1, 2 and 4
(b) Both 3 and 4
(c) Only 2
(d) Both 2 and 3

Q8. Observe the following randomly drawn figures and choose which of the following figures form a square?

(a) 3, 4, 5
(b) 1, 2, 5
(c) 2, 4, 5
(d) 1, 4, 2

Q9. A hollow cuboid is constructed with identical small bocks as shown in figure. Three such identical cuboids are attached to it to form a big hollow cuboid. Then the number of small bocks required to fill the hollow space is?



(a) 7
(b) 8
(c) 9
(d) 16

TYPE 4

Q1. A cube of side 80 cm is painted yellow on all the faces and then cut into smaller cubes of sides 8 cm each. Find the number of smaller cubes having all the three faces painted ?
(a) 32
(b) 28
(c) 8
(d) 64

Q2. A cube, whose two adjacent faces are coloured , is cut into 64 identical small cubes. How many of these small cubes are not coloured at all ?
(a) 32
(b) 16
(c) 36
(d) 48

Q3. A cube of side 18cm is painted yellow on all the faces and then cut into smaller cubes of sides 3cm each. Find the number of smaller cubes that have only two faces printed?
(a) 48
(b) 20
(c) 64
(d) 36

Q4. A cube painted red on all faces is cut into 125 cubes of the same size.

1. How many cubes are not painted on any face?
(a) 8
(b) 16
(c) 18
(d) 27 0

2. How many cubes are painted on one face only?
(a) 8
(b) 16
(c) 36
(d) 540

Q5. Directions: In this part, there are some miscellaneous questions related to the cubes.
I. A cube has six sides, each of which has a different color: black, brown, green, red, white, and blue.
II. The red side is opposite the black.
III. The green side is between the red and the black.
IV. The brown side is adjacent to the blue.
V. The blue side is adjacent to the white.
VI. The red side is the bottom face.

1. What are four colors that are adjacent to the green?
(a) Black, blue, brown, red
(b) Black, blue, red, white
(c) Black, blue, brown, white
(d) Black, brown, blue, white

2. Which of the information can be deduced from the information given in statement I, II, and V?
(a) Brown is on top
(b) Blue is on the top
(c) Black is on the top
(d) Brown is opposite to black

3. Which of the following statements given above adds no information?
(a) II
(b) III
(c) V
(d) VI

4. If the red side is exchanged for the green side and the blue is swapped for black, then which of the following is false?
(a) Red is opposed to black
(b) White is adjacent to brown
(c) Green is opposite to blue
(d) White is adjacent to blue

MISCELLANEOUS

TYPE 1 (Direction)

Q1. A school bus travels 5 km West, then turns South and travels 7 km, then turns East and travels 5 km, then turns to its left and travels 2 km. Where is it now with respect to the starting position?
(a) 5 km South
(b) 9 km South
(c) 5 km North
(d) 9 km North

Q2. A river connects two towns A and B. It flows 37 miles South from town A, then it turns West and flows 23 miles, then it turns North and flows 40 miles, then it turns to its right and flows 23 miles to reach town B. Where is town A with respect to town B?
(a) 3 miles South
(b) 13 miles South
(c) 3 miles North
(d) 13 miles North

Q3. A contestant in a cycle race starts and cycles 3 km North, then turns East and cycles 5.5 km, then turns South and cycles 3 km, then turns to his left and cycles 7 km. Where is he now with respect to the starting position?
(a) 1.5 km East
(b) 12.5 km West
(c) 12.5 km East
(d) 1.5 km West

Q4. Venu and Ronak start from the same point. Venu walks 95 m north, then turns east and walks 75 m, then turns to his right and walks 70 m. At the same time, Ronak walks 65 m south, then turns to his left and walks 75 m. Where is Venu now with respect to the position of Ronak?
(a) 90 m South
(b) 95 m North
(c) 90 m North
(d) 95 m South

Q5. Tarun was standing facing north-east. He turned 90 degrees clockwise direction and then 45 degrees in anti-clockwise direction. He again turned 180 degrees in anti-clockwise direction. Which direction is he facing now?
(a) North-east
(b) South-east
(c) West
(d) South-west

Q6. A dog facing north turns 180 degrees in the clockwise direction, it then turns 45 degrees in the anti-clockwise direction and then again turns 180 degrees in the anti-clockwise direction. Which direction is it facing now?
(a) North-east
(b) South-west
(c) North
(d) North-west

Q7. A man facing the North-east direction turns 90 degrees clockwise and then 30 degrees in the anti-clockwise direction. Then, he turns 15 degrees in the anti-clockwise direction. After that, he turns 180 degrees in the anti-clockwise direction. In which direction is he facing now?
(a) North
(b) South
(c) West
(d) East

Q8. In the morning, X and Y walk towards each other in a park. When they meet, Y's shadow falls towards the right side of X. In which direction was X facing?
(a) East
(b) South
(c) West
(d) North

Q9. A watch shows 6 p.m. when the hour hand points east. In which direction is the minute hand facing when the time is 9:15 p.m.?
(a) East
(b) South
(c) West
(d) North

Q10. Monday morning 9 AM, Sandhya and Ramya facing each other while they were playing chess in the garden. If Sandhya's shadow is her right side, Ramya is facing in which direction.
(a) West
(b) South
(c) North
(d) East

Q11. Neeraj is Northeast of Dheeraj. Dheeraj is in the North of Hitesh. Natasha is to the East of Hitesh. Dheeraj is in which direction with respect to Natasha?
(a) Northwest
(b) East
(c) Northeast
(d) West

Q12. On a clear Sunday morning Ayaan was walking in a park. He walks 400 meters south and then take right and walk for 600 meters, he again takes right and walk for 100 meters. At last he takes right and walk for 200 meters.
At the ending point the shadow of Ayaan will be on …….. side of him?
(a) Left
(b) Right
(c) Front
(d) Back

Q13. A boy was walking facing in the South direction. When he turned right and walked, his shadow was falling behind him. What can you say about the time of the day when he was walking?
(a) Morning
(b) Afternoon
(c) Evening
(d) Night

Q14. One morning, A and B sits at a beach facing each other. B's shadow is on A's right. They now interchange their positions. In what direction is A facing now?
(a) North
(b) East
(c) West
(d) South

Q15. Statements:
I. H is standing 15 meters to the left of M who is facing towards north direction.
II. P is standing 20 meters to the south of R who is 10 meters to the north of M.

Conclusions:
I. P is to the south-east of H.
II. II. H is to the north-east of R.

(a) Only conclusion I follows
(b) Both conclusions follow
(c) Only conclusion II follows
(d) None follows

Q16. Different fruits are placed at different position in such a manner that Apple is placed to the west of mango which is to the north of banana. Orange is to the east of mango and south of pear. Pear is to the east of Grapes. In which direction is apple with respect to grapes?
(a) North
(b) South-west
(c) North-east
(d) Can't be determined

Q17. Comprehension:
Harry starts from his house and travels 4 km in the north direction and after that, he takes left turn and travels further 5 km to reach his office. From office, he travels in south direction for about 7 km and then takes 2 left turns at an interval of 3 km to reach Vegetable Market

What is the distance between his house and vegetable market?
(a) 3 km
(b) 2 km
(c) 5 km
(d) 2.5 km

Q18. Vinod and Arpit are sitting facing each other at the time of sunrise. If Vinod's shadow falls to the right of Arpit, in which direction is Arpit facing?
(a) South
(b) East
(c) West
(d) North

Q19. One forenoon, a damaged compass points north of a guy's shadow. Then what is the actual north shown by the compass?
(a) North
(b) West
(c) South
(d) East

Q20. A, E, I, O, U, H, F, and W are sitting facing outwards around a circular table in clockwise manner in the same sequence at equal distances from each other. Then O and F interchange their positions. If H is facing the north, then which direction will O be facing?
(a) North-east
(b) South-west
(c) East
(d) West

Q21. If an electric train runs in the direction from North to South with a speed of 150 km/hr covering 2000 km, then in which direction will the smoke of its engine go?
(a) N → S
(b) S → N
(c) E → W
(d) No direction

TYPE 2 (Calendar)

Q1. If mirror image shows 10:15 in a 12 hrs clock, then what will be the actual timing?
(a) 1:40
(b) 1:45
(c) 11:45
(d) 2:30

Q2. If mirror image shows 4:20 in a 12 hrs clock, then what will be the actual timing?
(a) 7:30
(b) 7:44
(c) 7:40
(d) 7:45

Q3. In the morning, a clock showed 10 AM, and at afternoon it showed 2:30 PM. How many degrees has the hour hand moved?
(a) 120º
(b) 135º
(c) 140º
(d) 150º

Q4. What is the angle formed between the hands of a clock at 4:45 PM?
(a) 125.5º
(b) 122.5º
(c) 127.5º
(d) 130º

Q5. A clock shows 2 am now. Find the total rotation of the minute hand, in degrees, of the clock when it will show 9 pm on the same night?
(a) 8600°
(b) 6840°
(c) 6470°
(d) 5930°

Q6. Which year in the future will have the same calendar exactly as 2021?
(Note- In the case of the repeating year, we add 6 with the given year if the given year is a leap year + 1.**)**
(a) 2026
(b) 2027
(c) 2028
(d) 2029

Q7. A clock is set to the right time at 4:00 AM on Thursday. If it gains 20 seconds in every 3 hours, then what is the time shown on the clock at 8:30 PM on Friday night?
(a) 8 hours 34 minutes PM
(b) 9 hours 34 minutes PM
(c) 8 hours 34 minutes 30 seconds PM
(d) 8 hours 30 minutes 30 seconds PM

Q8. Which year was the same calendar as year 2015?
(a) 2010
(b) 2009
(c) 2007
(d) 2008s

Shortcut Trick

Year	Repetition after years
Leap year	28
Leap year + 1	6
Leap year + 2	11
Leap year + 3	11

Q9. If 23rd January, 2005 was Friday, what was the day of the week on 23rd January, 2007?
(a) Wednesday
(b) Sunday
(c) Tuesday
(d) Monday

Q10. At 10:00 am on Wednesday, the clock was 10 minutes faster than the actual time. On coming Saturday at 01:00 pm, the clock was 15 minutes slower than the actual time. At what time the clock shows the correct time?
(a) 03:00 pm Thursday
(b) 07:00 pm Friday
(c) 07:00 am Friday
(d) 04:00 pm Thursday

Q11. What is the angle between the minute hand and hour hand at time 45 minutes past 7'O clock?

Formula is - 30((M/5) – H) – (M/2)

(a) 37(2/3) Degree
(b) 38(1/2) Degree
(c) 37(1/2) Degree
(d) 36(1/2) Degree

Q12. If 15th February 2018 is a Thursday. On what day will 18th April 2019 fall?
(a) Saturday
(b) Thursday
(c) Friday
(d) Wednesday

Q13. If today is Monday, what day will be 128 days after today?
(a) Tuesday
(b) Wednesday
(c) Saturday
(d) Monday

Q14. The calendar of 1996 will be the same for which year's calendar?
(a) 2012
(b) 2024
(c) 2007
(d) 2002

Q15. If in a non - leap year, the new year was celebrated on Friday, then on which day, Independence day will be celebrated in the same year?
(a) Friday
(b) Thursday
(c) Saturday
(d) Sunday

Q16. If 1 February 2020 was a Friday, then what day would fall on 1 February 2030?
(a) Thursday
(b) Friday
(c) Saturday
(d) Sunday

Q17. When seen through a mirror, a clock shows 8:30 as the time. The correct time is _____.
(a) 4:30
(b) 1:30
(c) 7:30
(d) 3:30

Q18. Find the angle between the minute hand and the hour hand of a clock when the clock is 10 minutes past 3?
(a) 45 degrees
(b) 30 degrees
(c) 50 degrees
(d) 35 degrees

Q19. What day would it be on 29th March 2020?
(a) Friday
(b) Monday
(c) Sunday
(d) Saturday

Q20. How many leap years are there in a period of 100 years?
(a) 23
(b) 22
(c) 24
(d) 25

NOTE- Century leap year are those which are completely divisible by 400.
For ex: 100, 200 are not leap years while 400, 800, 1200 are leap years.

Q21. If 2012, 2nd February was on Wednesday, then in which year it will be repeated?
(a) 2020
(b) 2049
(c) 2017
(d) 2040

Q22. How many odd days are there from 1950 to 1999?
(a) 1
(b) 2
(c) 4
(d) 6

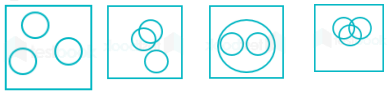
Q23. A girl saw a clock when it was 3 am. The clock losses 16 minutes per day. What will be the actual time when she sees the clock on the 4th day at 8 pm?
(a) 9 : 15 pm
(b) 9 : 00 pm
(c) 8 : 30 pm
(d) 9 : 30 pm

Q24. If the water image of the clock shows time 12 hours 59 minutes, then what will be the actual time?
(a) 05 hours 31 minutes
(b) 12 hours 12 minutes
(c) 09 hours 59 minutes
(d) 06 hours 31 minutes

Note - If minutes given are less than 30, then subtract given time from 17:30 hrs.
If minutes given are more than 30, then subtract given time from 17:90 hrs.

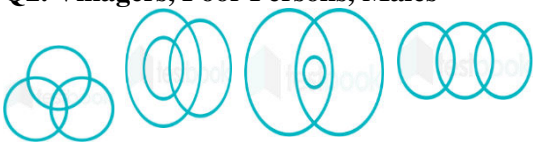
TYPE 3 (Venn Diagram)

Q1. Alphabet, Consonants, Vowels



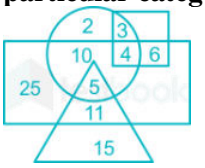
(a) (b) (c) (d)

Q2. Villagers, Poor Persons, Males



(a) (b) (c) (d)

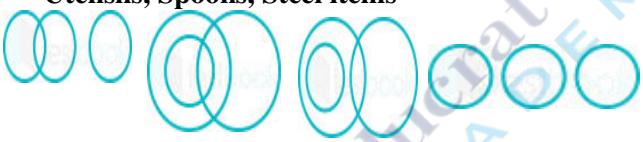
Q3. The triangle represents executives, the circle represents females, the rectangle represents MBAs and the square represents technical staff. The numbers given in the diagram represent the number of persons in that particular category.



How many female executives are there in the organisation?

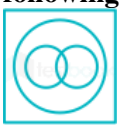
(a) 11
(b) 15
(c) 5
(d) 10

Q4. Utensils, Spoons, Steel items



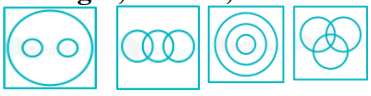
(a) (b) (c) (d)

Q5. The Venn diagram given in the question represents the relationship between the items given in which of the following options?



(a) Flowers, leaves and bees
(b) teachers, women and humans
(c) mangoes, potatoes and vegetables
(d) cats, dogs and pets

Q6. Singer, Painter, Doctor

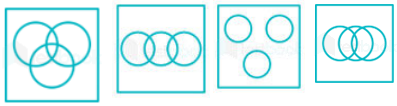


(a) (b) (c) (d)

Q7. Barack Obama, Boris Yeltsin, Narendra Modi, President

(a) (b) (c) (d)

Q8. Which figure represents the relation among cotton, rayon, cloth?



(a) (b) (c) (d)

Q9. Uncle, Relatives, Rich

(a) (b) (c) (d)

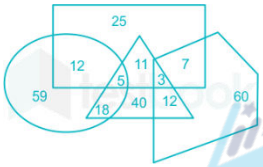
Q10. In a class of 60 students, 25 play cricket, 20 students play tennis and 10 students play, both the games. The number of students who play neither tennis nor cricket is

(a) 35
(b) 40
(c) 25
(d) 50

Q11. Professors, scientists, researchers

(a) (b) (c) (d)

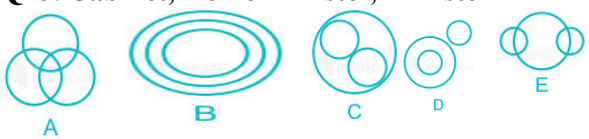
Q12. The data of a company's employees is shown by the given Venn diagram. The circle represents 'engineers', the triangle represents 'computer experts', the rectangle represents 'MBAs' and the pentagon represents 'female'. The numbers given in the diagram represent the number of persons of that particular category.



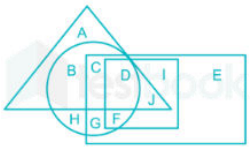
How many of the employees are MBAs, and how many male MBAs are computer experts but NOT engineers, respectively?

(a) 44, 11
(b) 63, 11
(c) 25, 18
(d) 44, 16

Q13. Cabinet, Home Minister, Minister –

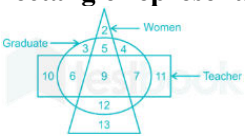


Q14. In the following figure, TRIANGLE represents actors, CIRCLE represents heroes, SQUARE represents kings and RECTANGLE represents rich persons. Which set of letters represents rich actors?



(a) C
(b) D, C and J
(c) C and D
(d) D, C and G

Q15. In the following diagram, the triangle represents 'women', the circle represents 'graduates' and the rectangle represents 'teachers'. The numbers in different segments show the number of persons.



How many women graduates are not teachers?
(a) 9
(b) 12
(c) 17
(d) 5

Q16. In a class of 56 students, 18 students do not play any game, 27 play hockey and 29 play volleyball. How many students play hockey and volleyball both?
(a) 19
(b) 11
(c) 9
(d) 18

Q17. In a group of 60 people, 39 persons want to watch 'Pati Patni aur Wo' movie, while 29 persons want to watch 'Mardaani' movie. If every member wants to watch at least one movie, then how many persons want to watch both the movies?
(a) 21
(b) 8
(c) 18
(d) 31

Q18. In a coffee shop, a total of 58 customers came throughout the day. 36 of them ordered coffee and 32 of them ordered pizza. How many customers ordered both coffee and pizza?
(a) 14
(b) 12
(c) 8
(d) 10

PUZZLES

Q1. If 'P' means 'subtracted from', 'X' means 'multiplied by', 'Y' means 'added to', and 'Z' means 'Divided by', then:
54 Z 3 Y 22 X 5 = ?
(a) 135
(b) 128
(c) 110
(d) 144

Q2. If '+' means '÷', '-' means '×', '×' means '+', and '÷' means '-', then what is the value of:
64 - 81 + 9 × 4 = ?
(a) 570
(b) 630
(c) 580
(d) 510

Q3. Which two signs should be interchanged in the following equation to make it correct?
3 - 6 × 18 + 4 ÷ 2 = 2
(a) and ÷
(b) × and -
(c) × and ÷
(d) × and +

Q4. Which two signs should be interchanged to make the given equation correct?
(72 ÷ 18) + 30 × 8 − 4 = 20
(a) + and -

(b) + and ×
(c) × and ÷
(d) + and ÷

Q5. The sum of a number and its reciprocal is 17/4, Find the numbers.
(a) 4 and 1/2
(b) 3 and 1/3
(c) 5 and 1/5
(d) 4 and 1/4

Q6. Five chairs C1, C2, C3, C4 and C5 are placed one above the other. If C1 is above C2, C3 is above C4 but below C5 and C4 is above C1, which chair is in the middle?
(a) C1
(b) C2
(c) C3
(d) C4

Q7. A tourist mini bus travelled from Nagpur to Shirdi without stopping. It covered the first 50 miles of the journey at an average speed of 25 mph. What was the bus's average speed (in mph) for the remaining 130 miles, if its overall average speed was 45 mph?
(a) 65
(b) 28
(c) 50
(d) 40

Q8. While writing all the natural numbers from 1 to 100, how many times do we write 6 ?
(a) 20
(b) 18
(c) 21
(d) 19

Q9. There are two numbers. The difference between these two numbers is 2 and the difference between their squares is 8. What are those numbers?
(a) 12, 10
(b) 3, 1
(c) 7, 5
(d) 8, 6

Q10. Which two signs should be interchanged in the following question to make it correct.
7 × 116 ÷ 4 - 17 + 5 = 200 ÷ 4 × 4 - 75 ÷ 5

(a) + and -
(b) ÷ and ×
(c) - and ×
(d) × and +

Q11. If 'A' stands for 'subtraction, 'B stands for 'Multiplication', 'C' stands for 'additions', and D stands for 'division', the what is the value of the following expression?

43C 29B 3A 14B (5C4)C 11C (14A 3)A 64 D 8 B2
(a) 10
(b) 27
(c) 110
(d) 83

Q12. Three persons A, B and C have different amounts of rupees with them. If A takes 12 from C, A will have equal amount as B has. A and B together have total 102. How many rupees does A have?
(a) 50
(b) 55
(c) 45
(d) 57

Q13. The average age of a group of 8 people is 12. If a person aged 19 years leaves the group. Then find the average age of the remaining persons in the group.
(a) 13
(b) 11
(c) 15
(d) 17

Q14. In a class, 93 students are attending a class which including 44 boys and 49 girls. In the next period, 17 boys and 11 girls leave the class and 21 girls and 14 boys enter the class.
What is the difference in the number of boys and girls in the class now?
(a) 16
(b) 17
(c) 18
(d) 19

Q15. The age of 4 people are 57, 34, 40 and 16. Which of the following cannot be the total age of any combination of these people if in the combination a person's age can be used only once including minimum of 3 persons?
(a) 147
(b) 90
(c) 114
(d) 107

Q16. Rahul has Rs. 340 in the denominations of Rs. 2 notes, Rs. 5 notes and Rs. 10 notes. The number of notes of each denomination is equal. What is the total number of notes that Rahul has?

(a) 60
(b) 80
(c) 40
(d) 20

Q17. The average of 5 consecutive even numbers is 12. Find the sum of the second highest number and the lowest number?
(a) 18
(b) 22
(c) 24
(d) 26

Q18. Angles of a given triangle are in the ratio of 2 : 3 : 4 What kind of triangle is the given triangle?
(a) Right-angled
(b) Obtuse angle
(c) Isosceles
(d) Acute angle

CLASSIFICATION

Q1. Four letter-clusters have been given, out of which three are alike in some manner and one is different. Select the odd letter-cluster.
(a) QJU
(b) TGX
(c) DWH
(d) OKS

Q2. Four words have been given, out of which three are alike in some manner and one is different. Select the odd one.
(a) Stag
(b) Larva
(c) Nymph
(d) Foal

The logic is:

1) Stag → A male deer is called stag.

2) Larva → A larva is the young stage of some insects.

3) Nymph → A nymph is the young stage of some kinds of invertebrates, especially insects.

4) Foal → The young one of a horse is called a foal.

Q3. Four number triads have been given, out of which three are alike in some manner and one is different. Select the number triad that is different from the rest.
(a) (273, 546, 819)
(b) (291, 438, 657)
(c) (326, 654, 981)
(d) (192, 384, 576)

Q4. Three of the following four words are alike in a certain way and one is different. Pick the odd one out.
(a) Doe
(b) Fawn
(c) Vixen
(d) Queen

Q5. Four letter - clusters have been given, out of which three are alike in some manner and one is different. Select the odd letter - culster.
(a) HNM
(b) LRI
(c) CHR
(d) TZA

Q6. In the following question, four groups of three numbers are given. In each group the second and third number are related to the first number by a Logic/Rule/Relation. Three are similar on basis of same Logic/Rule/Relation. Select the odd one out from the given alternatives.
(a) (4, 17, 13)
(b) (6, 19, 15)
(c) (15, 28, 25)
(d) (11, 24, 20)

Q7. In the following question, four group of three numbers are given. In each group, numbers are related by a Logic/Rule/Relation. Three are similar on the basis of the same Rule/Relation/Logic. Select the odd one from the given alternatives.
(a) 16, 36, 196
(b) 81, 121, 361
(c) 2601, 289, 3969
(d) 441, 1089, 4761

Q8. In the following question, select the odd number from the given alternatives.
(a) 183
(b) 416
(c) 622
(d) 915

Q9. Three of the four numbers are alike in a certain way and one is different. Pick the odd number out.
(a) 325
(b) 195
(c) 544
(d) 416

Q10. Three of the following four number-pairs are alike in a certain way and one is different. Find the odd one out.
(a) 7 : 11
(b) 11 : 25
(c) 9 : 17
(d) 13 : 29

Q11. In the following question, select the odd number pair from the given alternatives.
(a) 234 : 512
(b) 212 : 64
(c) 312 : 27
(d) 101 : 1

Q12. In the following question, select the odd word from the given alternatives.
(a) Water
(b) Steam
(c) Ice
(d) Evaporation

Q13. In the following question, select the odd word from the given alternatives.
(a) Doctor : Physician
(b) Journalism : Journalist
(c) Engineering : Coder
(d) Architecture : Building

Q14. In the following question, select the odd name from the given alternatives.
(a) India 2020- A vision for the new millennium
(b) Wings of Fire- An Autobiography
(c) Exam Warriors
(d) The Luminous Sparks

Q15. In the following question, find the odd one from the given alternatives. (On the basis of Boundaries)
(a) Bihar
(b) Uttrakhand
(c) Punjab
(d) Chhattisgarh

ANALOGY

Q1. In the following question, select the related letters from the given alternatives.
AB : I :: CA : ?
(a) A
(b) P
(c) N
(d) S

Q2. In the following question find out the alternative which will replace the question mark.
BNKPDX : 8 :: MFRXCQ : ?
(a) 7
(b) 3
(c) 1
(d) 9

Q3. In the following question, select the related letters from the given alternatives.
AVENGER : VEZMIVT :: CAPTAIN : ?
(a) KZXGMRZ
(b) KZYHMRZ
(c) KZXHNRZ
(d) None of these

Q4. Select the related letters from the given alternatives.
NPR : GHI : : TVX : ?
(a) JKL
(b) MJT
(c) IJK
(d) PQR

Q5. In the following question find out the alternative which will replace the question mark.
DM : C :: RB : ?
(a) A
(b) B
(c) C
(d) D

Q6. Select the option that is related to the third letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster.
SISTER : UKUOBQ : : FATHER : ?
(a) TAHFER
(b) VCHOBE
(c) OBECHV
(d) HATFER

Q7. In the following question, select the related number from the given alternatives.
37 : 27 :: 89 : ?
(a) 99
(b) 72
(c) 76
(d) 58

Q8. Select the related number from the given alternatives.
1111 : 4444 :: 1020 : ?
(a) 4081
(b) 3060
(c) 2040

(d) 2222

Q9. Three of the following four numbers are a like in a certain way and one is different, Pick the number that is different from the rest.
(a) 341
(b) 209
(c) 166
(d) 154

Q10. Select the related number from the given alternatives.
2521 : 184 :: 1716 : ?
(a) 112
(b) 331
(c) 54
(d) 33

Q11. Select the missing word from the given related pair of words.
Ancient : Old :: Bedspread : _____
(a) Comforter
(b) Berth
(c) Pillow
(d) Couch

Q12. Select the word-pair in which the two words are related in the same way as are the two words in the following word-pair.
(a) Frown : Displeasure
(b) Laugh : Comedy
(c) Madness : Illness
(d) Smile : Ecstasy
(e) Grief : Sorrow

JUMBLE WORDS

Q1. If you will arrange the following options, it will give you a meaningful word. Select the odd word from the given alternatives.
(a) YCATCNUANCO
(b) AMTEAHISCMT
(c) TICODRIYNA
(d) OESIOCMNC

Q2. Rearrange the jumbled letters to make a meaningful word and then select the one which is different.
A. ERATH
B. RAINB
C. KINYUED
D. NEDYKI

(a) C
(b) A
(c) D
(d) B

Q3. Arrange these letters of each group to make a meaningful word and then find the odd one out.
(a) ANCEDC
(b) BAHECN
(c) ARAAHHGG
(d) TIMGO

Q4. Rearrange the jumbled-up letters in their natural sequence and find the odd one out.
(a) SIUMC
(b) TIRUAG
(c) LNIOVI
(d) IOAPN

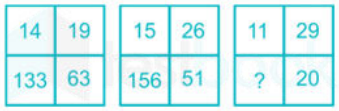
Q5. From the given alternatives, select the word which CANNOT be formed using the letters of the given word.
RANKING
(a) INK
(b) RAIN
(c) KING
(d) ACTING

Q6. In the following question, select the word which cannot be formed using the letters of the given word.
HERMETIC
(a) Either
(b) Thrice
(c) Rest
(d) Metric

Q7. In the following question, select the word which can be formed using the letters of the given word.
SMOKEJACKS
(a) SMOKEE
(b) SJCKA
(c) MJKJOC
(d) CESSME

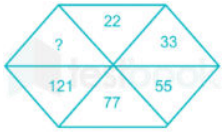
Q8. YLINERCD – If the letters appearing here can be arranged to a sensible word, the last letter of the word will be? If more than one words are possible mark 'S'. If no words are possible mark 'X'.
(a) R
(b) Y
(c) S
(d) X

Q9. In the following question, select the number which can be placed at the sign of question mark (?) from the given alternatives.



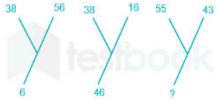
(a) 87
(b) 191
(c) 230
(d) 569

Q10. In the following question, select the number which can be placed at the sign of the question mark (?) from the given alternatives.



(a) 134
(b) 143
(c) 131
(d) 132

Q11. Which number replaces the question mark below?

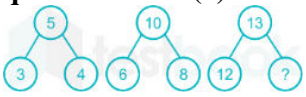


(a) 9
(b) 7
(c) 2
(d) 8

Q12. In the following question, select the number which can be placed at the sign of question mark (?) from the given alternatives.

(a) 12
(b) 13
(c) 10
(d) 11

Q13. Select the option that will correctly replace the question mark (?) in the given pattern.

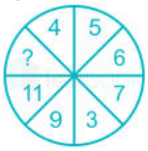


(a) 7
(b) 11
(c) 13
(d) 5

Q14. In the following question, select the number which can be placed at the sign of question mark (?) from the given alternatives.

(a) 40
(b) 10
(c) 36
(d) 43

Q15. Insert the missing character in?



(a) 13
(b) 14
(c) 12
(d) 15

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