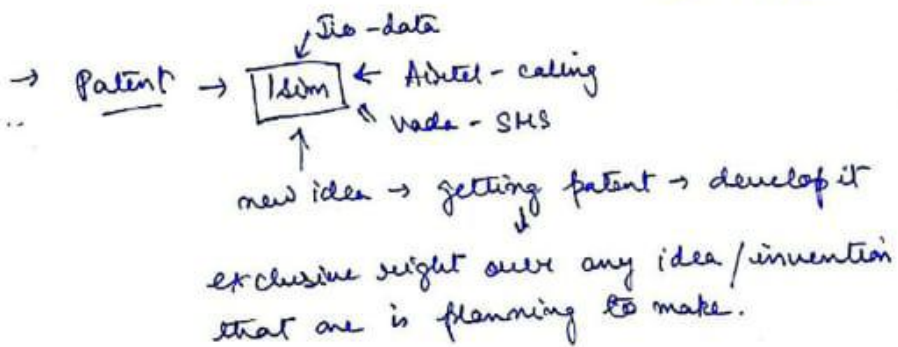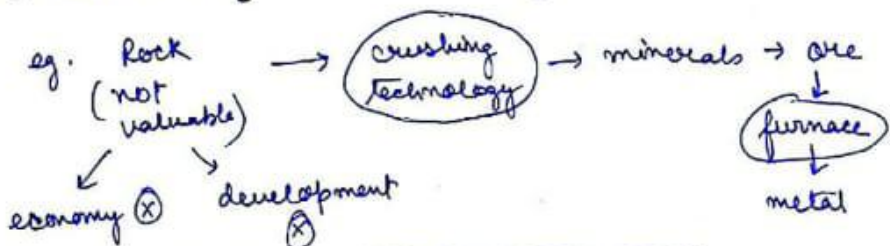## Ch - 1 - Resources

→ value - worth

→ past : land - no worth

now : prices gone up → value (↑) → valuable
resource

→ water ; we can't appreciate potential of a resource
but later it may become valuable,
• value (↑) over time.

→ As a human being, economic + [sense of + social]
we look for   value   [belongingness values]

non - economic.

→ Patent → | 1sim | ← Airtel - calling
↑ Jio-data
" Voda - SMS

new idea → getting patent → develop it

exclusive right over any idea/invention
that one is planning to make.

→ Substance [+ Time, technology] = Resource.

eg. Rock   → (Crushing → minerals → ore
(not   Technology)   ↓
valuable)   (furnace)
↙   ↘   ↓
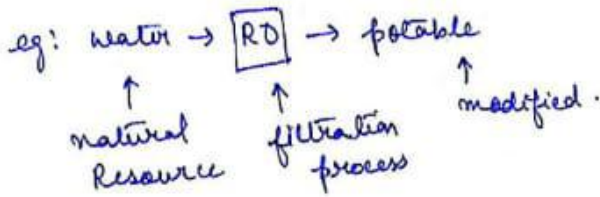economy ⊗   development   metal
⊗

| Necessity / Time → mother of invention |

→ People → Resource
• Different levels of skills, knowledge, invention,
discovery → can transform one resource to
another.

• Potential Resource → Actual Resource

eg: water | 'Man behind machine
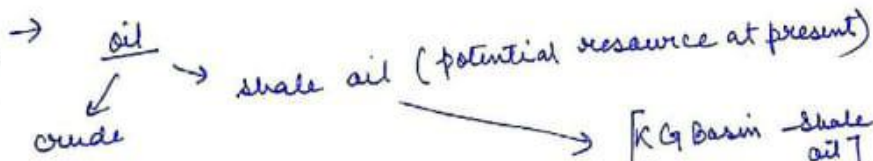fights the war' |

eg: water → [RD] → potable
 ↑   ↑   ↑
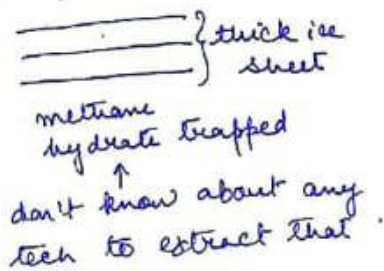natural   filtration modified.
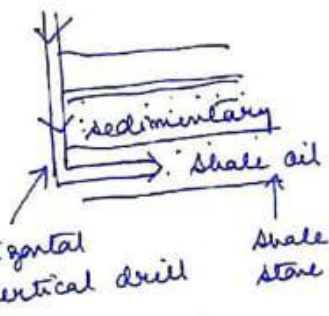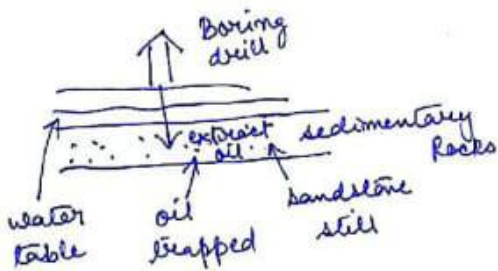Resource   process

① Natural Resource :

① Actual Resource: Quantity is known, used at present
eg: Coal : Ruhr, Germany.
- quantity, existence known, being used at present.

② Potential Resource: entire quantity not known, used at present ⊗
eg: methane hydrate

- trapped methane

} thick ice sheet

methane hydrate trapped
↑
don't know about any tech to extract that.

→   oil
      ↙   → shale oil (potential resource at present)
   crude   → [KG Basin - shale oil]

Boring drill
extract oil
water table   oil trapped   sandstone silt   sedimentary Rocks

Horizontal + vertical drill   shale stone
sedimentary
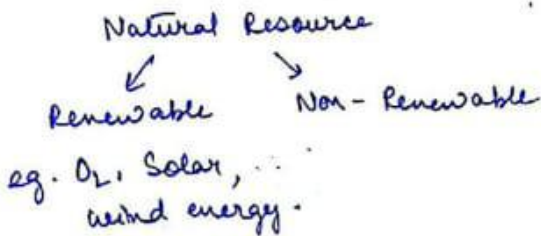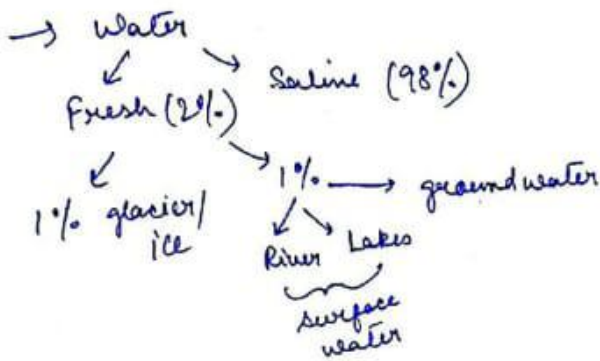→ shale oil

- Hydraulic fracturing

USA - self - sufficient,
India: - tech limitation in extraction,
- no expertise
- expensive.

③ Based on origin → Biotic
→ Abiotic

Natural Resource

Renewable   Non - Renewable

eg. O_2, Solar,
wind energy.

> Careless use of resources affect stock

→ Water

Fresh (2%)   → Saline (98%)

1% glacier/ice

→ 1% → ground water

River   Lakes

surface water

Non - Renewable
_____

eg. coal

fracture
↓
plants get buried (for years)
1000/2000 . . .
↓
coal

(does not
get renewed
easily)

④ Based on distribution:

ubiquitous   localised
↓   ↓
industries can   Iron, coal etc (local)
be relocated   eg. Chotanagpur Plateau
anywhere
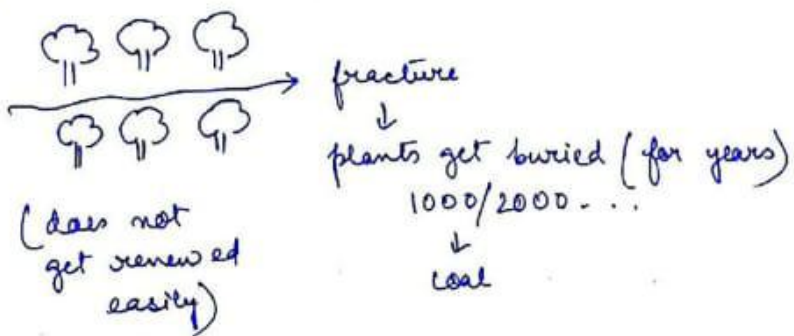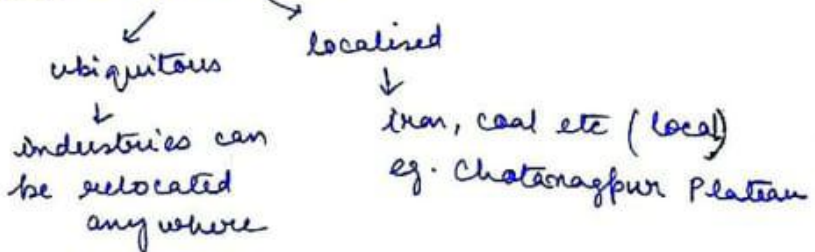
Distribution of natural resources depends on
→ physical factors:
  — Terrain
  — climate - eg coal (hot - humid, equitorial parts)
  — altitude (mimics latitude) [Representation of climate as we go high]

Imp.
⇒ Regional disparity:
    Unequal distribution of resources can be manifestation of the regional diversity of the world, especially in India. However, unequal distribution of resources because of physical factors can not be the sole reason for regional disparity. Human factors (tech, modernization, level of literacy, skills etc) also play an important role in determining the regional disparity.

eg ① JH (Chotanagpur Plateau is endowed with much of the minerals and other natural resources but does not have proportionate level of Regional development.
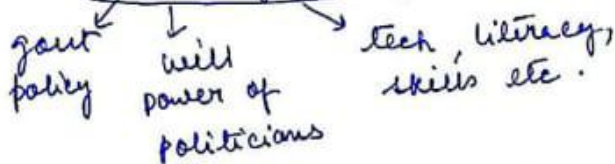
   ② Japan - Human factor has led to development
       — 70% mts / forests
       — devastated with tsunami, earthquake etc
       ⇒ less corruption, gout support
                    → development

   ⇒ Resource ⤳ Biotic
               ⤳ Abiotic
               ↳ Human Resource
                    +
                 Human Development
                    → Regional Development

→ Bihar, UP, WB, JH → diversity lacking.
— Not to do with resource aspect only but (human factors) as well.

govt policy   will power of politicians   tech, literacy, skills etc.

Tech → Human made resource → Natural Resource → Viable Resource

(II) Human Resources

Human behind → Tech
            → Machine
            → Economy.

skills
Education   Resource
Health
opportunities   Asset for society.

Population
↓
not resource as such, but liability
→ not a good asset
govt policy   Parents etc

→ Human Resource
        ↙   ↘ Ability
    quantity   ↙   ↘
    ↙   ↓   mental   Physical
liability Asset   ↳ IQ, skills ↳ skilled

liability   Resource: HR
↑
subsidy   MGNREGA etc.
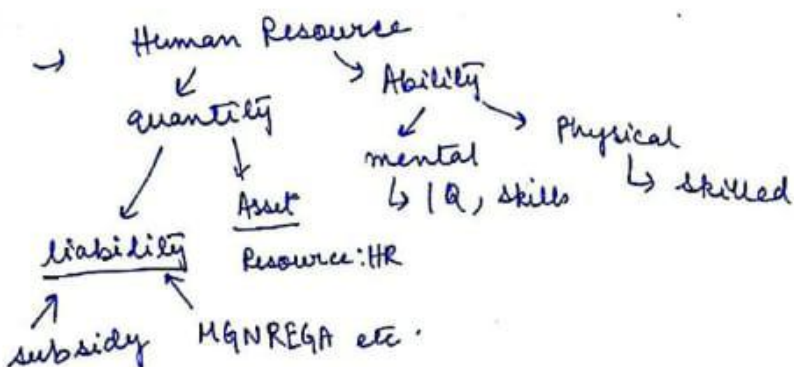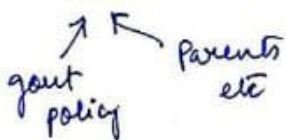
(11) Demographic Dividend:

DD as defined by UN's Population Fund. means the economic growth potential that can result from shift in population 's age structure, mainly when share of working age population (15-64 yrs) is larger than non-working age share of population. (b/w 14 yrs and 65 yrs)
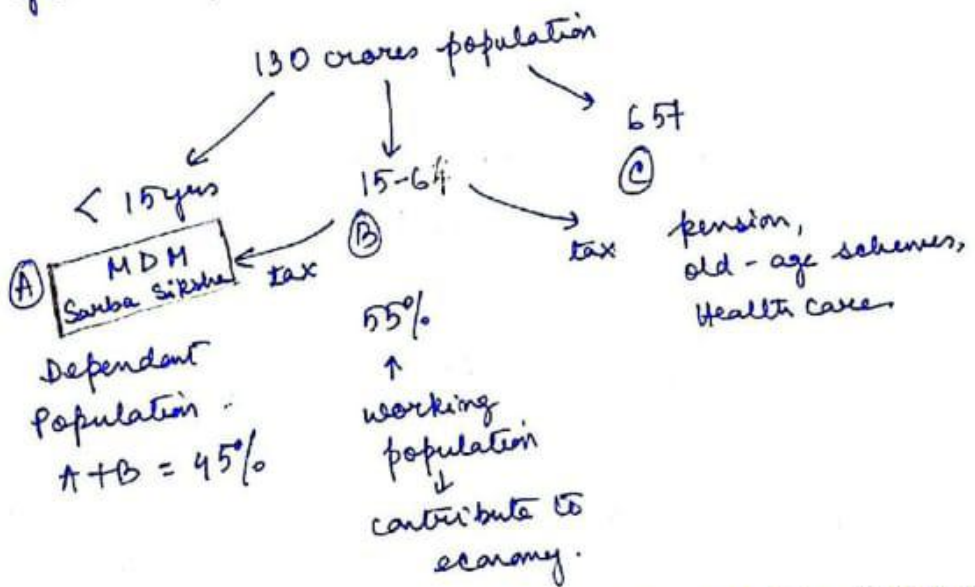
DP occurs when population of working people in total population is high because that indicates that more people have the potential to be productive and contribute to the growth of economy.

130 crores population

→ 65%
©
< 15yrs   15-64
(A) MDM Sarba Siksha tax (B)   tax   pension,
                                             old-age schemes,
Dependant   Health care,
Population: 55%
A + B = 45%   ↑
                   working
                   population
                   ↓
                   contribute to
                   economy.

eg: India: Dependant population << working population
                              → advantage for economy

Reverse - : Japan: [Balance should be
                    b/w death Rate and
                    fertility Rate]

Ch: 2 : Land, Soil, Water, N. Veg, Wildlife

- ① Land: 30% of total area of earth's surface
  Habitable land: biosphere

② Non - Ecumene and ecumene
  ↓   ↳ Habitable zones
  • Harsh area   — Physical conditions
  • Physical conditions   • Temp, Climate, precipitation
  — too hot, cold, dry,   favourable for lives to
    windy   survive.
  — inhabitable.
      ⇓
  did not take into
  account human factors
  eg. Desert, human settlement

③ Population distribution around the world.

→ PD all around the world is dependant on 2
  factors —

(i) Physical factors: Climate, soil, topography, water
                      altitude etc.

(ii) Human factors: Death Rate, level of technology,
                    skills, govt policies etc.

   These 2 factors together act to determine
   the density / distribution of population all around
   the globe -

eg: a) Siberia: inhospitable climate / extreme climate
                    ↓
              govt policy → land
                          → House   } People
                          → subsidy } relocate

   b) Japanese: skills: Inspite of Tsunamis
                         people are inhabiting
                         there.

3) Level of technology: hot country : AC.

Human has transcended physical barriers to inhabit the places that were earlier considered as non-ecumene (Harsh climatic regions, Inhospitable regions)

④ Land use:

Land → used for different purposes → Houses → agri → forestry → mining etc.

Land use ↙

→ Land use pattern of any country can be reflection of probable eco-activities of that country —elaborate

eg① India : 57% cropland : 50-55% agri dependant

→ Not much grassland in India : 4% pasture.
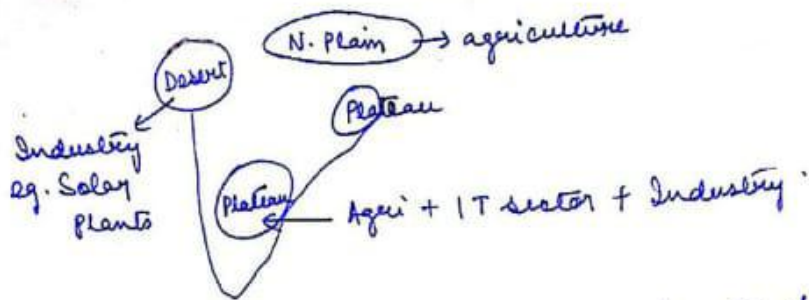
② Australia : 56% pasture : cattle grazing.

③ Japan : Agri 12% but, land is used intensively
labour ← ↓ ↓
machine tech fertilizer

⑤ Land → Private land (individual owned)
→ community land.

⑥ Land is a finite resource, we have conflicting/ competiting demand for the land, also the quality of land depends from place to place; depending on quality of land we can have different use of land.

For eg. not every land of our country is suitable for agriculture.

N. Plain → agriculture

Desert

Plateau

Industry
eg. Solar
Plants

Plateau ← Agri + IT sector + Industry

→ Industries must be located to deserts, plateaus etc.

→ agri - artificial ecosystem → degrading land (overuse)

∴ → sugarcane → resource exhaustation (nutrition)

Plant peas → have ability to fix N_2
↓
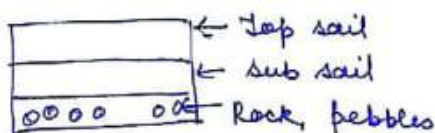soil fertility comes back

⑦ Land degradation:

Land and soil as basic resources in agriculture are vulnerable to soil erosion, salinity which will impact agricultural productivity.

LD - reduction, loss of biological productivity of land. Extreme weather conditions like drought, human activities like over cultivation, over grazing etc can degrade quality of land and soil. This can negatively affect food production, livelihoods and various other ecosystem services (food/gas balance)
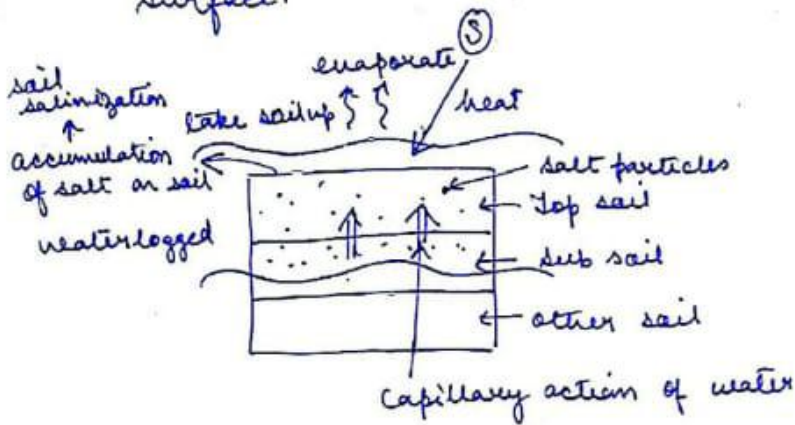
→ Causes:

① soil pollution: Agri, Industries, Household.

② Soil erosion: Removal of top soil and consequently sub-soil. Mainly soil erosion is water - based erosion.

← Top soil
← Sub soil
o o o o   o o ← Rock, pebbles

(iii) Soil salinity : accumulation of salt on soil surface:

soil
salinization
↑
accumulation
of salt on soil

waterlogged

take soil up ⎰ ⎱ evaporate ⑤
                    ⎱ heat

salt particles
Top soil
Sub soil
other soil

Capillary action of water

(iv) Desertification: extreme form of land degradation, land becomes barren

eg: Sahel Region, India - Malwa, Chambal.
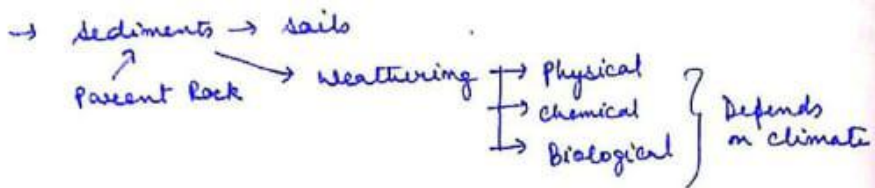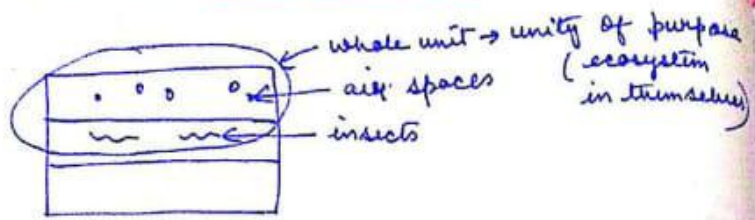
→ Impact of LD:

① Food production (↓)
② Nutrition (↓)
③ Env (↓)
④ Livelihood
⑤ Agriculture → GDP (↓)
⑥ Rural distress (70% lives in villages)

⑧ Soil:

Soils are one of the basic and imp resources of mankind. Soil should not be seen as an aggregate or consolidation of dirts or sediments

soils are often considered as natural thing, they are an ecosystem in themselves. Soil comprises sediments, nutrients, air spaces, moistures and living organisms (insects, bacteria, earthworms)

whole unit → unity of purpose
(ecosystem in themselves)

air spaces

insects

→ Sediments → soils

Parent Rock → Weathering → Physical
→ chemical
→ Biological } Depends on climate

⇒ Factors affecting soil formation:

(i) Parent Rock —

→ Rocks decide texture of soil.
Hard Rocks in general gives coarser texture — bigger grains.
Soft Rocks - fine facture (fine grains)

→ Texture will decide porosity/permeability of soil (air pores).
• granite permeable because of fracture.
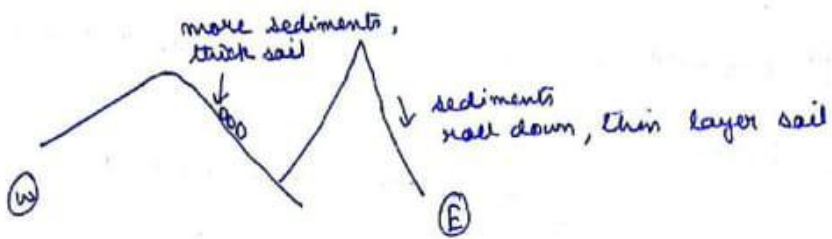
→ Rocks decide nutrient content of soil.

(ii) Climate:

Most active factor in soil formation:
— Climate will decide the type of weathering process. Also the climate will decide the dominant agent of denudation in a particular area.
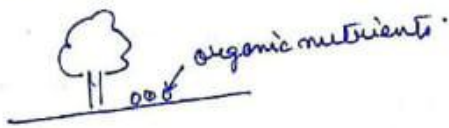
(iii) Relief/Topography:

It is about ht/elevation/slope aspect etc.

more sediments, thick soil

↓ sediments roll down, thin layer soil

(W)   (E)

(iv) **Biota**

→ Vegetation of area, animals, micro organisms.

organic nutrients.

→ Biota will decide nutrient component of a soil.
- Organic nutrients
- humus content

→ also responsible for weathering

(v) **Time:**

Duration for which soil forming factors and process operate.

Alluvial Plain
→ not spent much time, soil profile relatively thin.

(River)

⇒

water percolate

← Roots

→ leached

Nutrient content (accumulated)

→ Enriched layer

Continuous Rain

→ Partially weathered layer

Nutrients not available

→ Unweathered Parent Rock

→ leached nutrients

— Oxysols (Heavily leached soil)
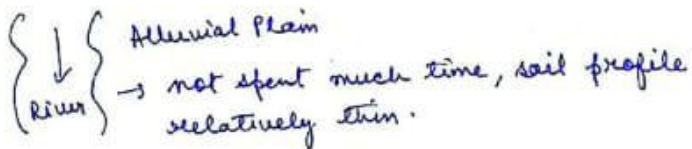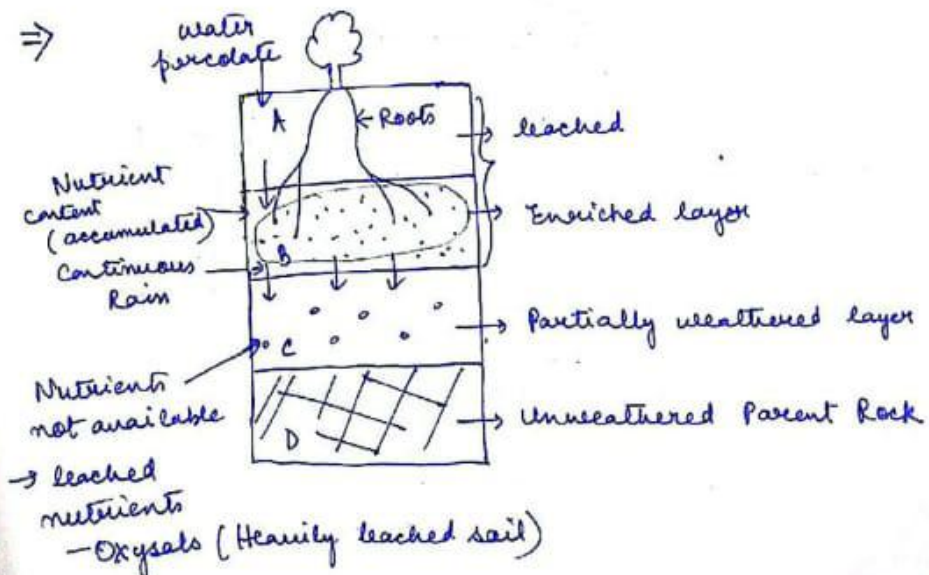
⑨ Degradation of soil and conservation measures:
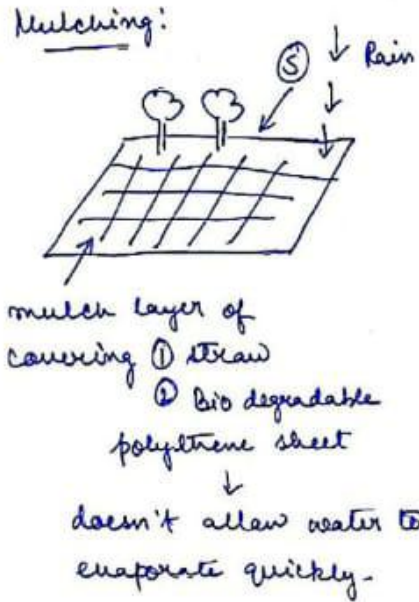
ⓐ Mulching:

↓ Rain → if bare ground,
 ↓ soil erodes
 (but)

↓ ↓ ↓
mulch
↓
no soil erosion
↓
water percolates slowly,
no evaporation.

mulch layer of
covering ① straw
 ② Bio degradable
 polythene sheet
 ↓
doesn't allow water to
evaporate quickly.

ⓑ Contour barriers:

contour binding
water will stop,
increased settlement time

Raised barriers →
Percolate, ground water recharge

ⓒ — Rock Dam.

ⓓ Trenches

← bunds
← trenches.

ⓔ Terrace farming

← water

along
↑
flat
surface
— good for
 cultivation
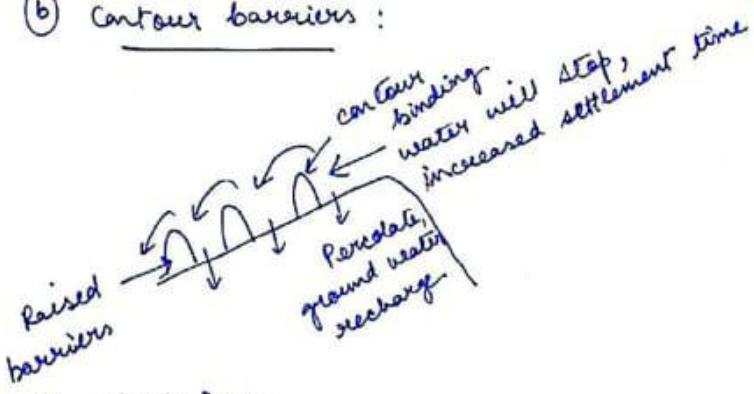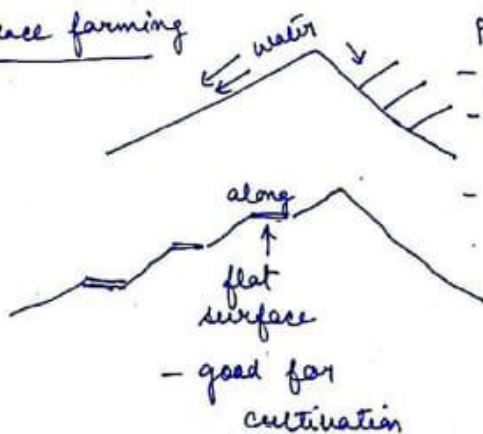
ⓕ Contour ploughing
↓
Ploughing ⊥ ly
— water stay
— more settlement time
— more moisture time

(8) eg:

↓ ↓
dry wind

Africa
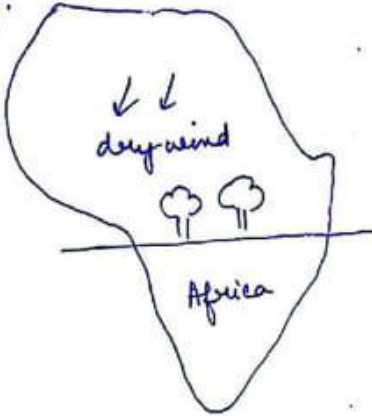
shelter belt.
- Coastal / Dry regions → rows
  of trees planted → check wind
  movement → protect soil
  cover.

(9) Water sprinkler

(S)
↓ →
↓
← crop
water around roots
← pipes
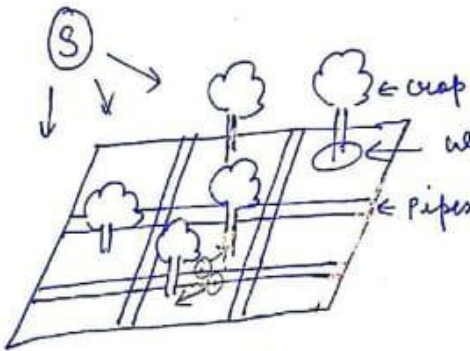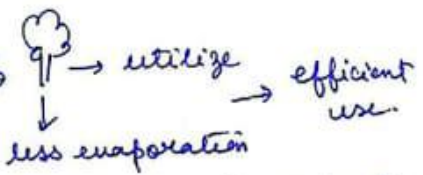
[If salty water
→⊖→ leakage
↓
water logging
↓
soil salinity]

normal
case :
→ evaporated
← water
← utilized

In , W.S,
water at regular interval → → utilize → efficient use.
↓
less evaporation
(availability of water throughout
the day)

(10) Rainwater Harvesting: collecting rain water + use

Soil Salinity:

eg.

Indira Gandhi Canal.

→ leakage
↓
water logging,
evaporation,
soil salinity

← capillary action.
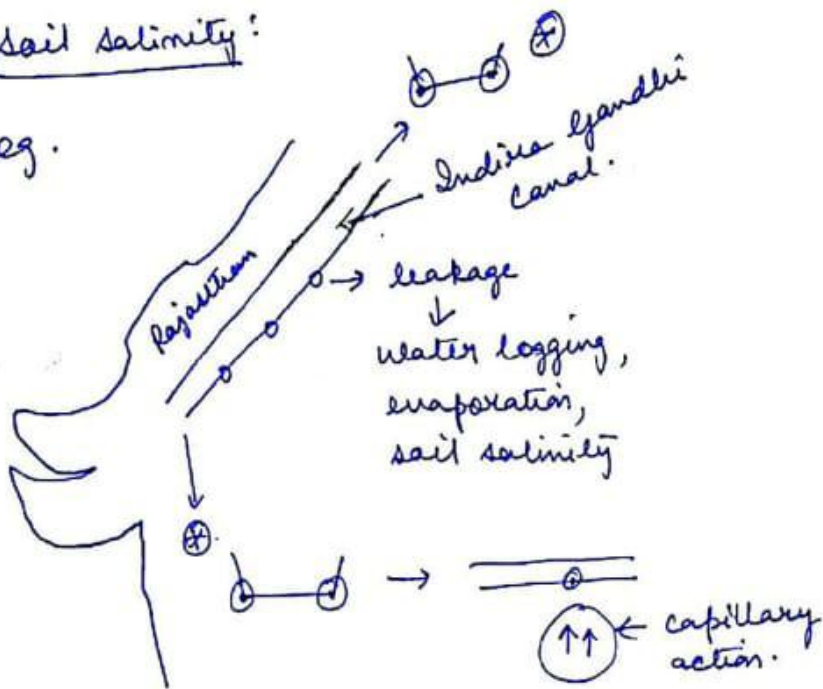
⊛ Rajasthan — Bishnoi Community.

CITES → Control illegal trade

① Appendix I — most vulnerable species, utmost protection from illegal trade

② App II — Relatively less vulnerable

③ App III — (CITES)
↑
states/country → request to conserve species → no declining.

Refer EVS

Wildlife Sanctuary	National Park
species specific	landscape oriented
Less stringent laws	more stringent laws, greater protection.

Ch: 3 - Mineral and Power Resources.

→ Rock ← → Minerals
- mechanical   - Definite
  mixture of   Composition.
  minerals
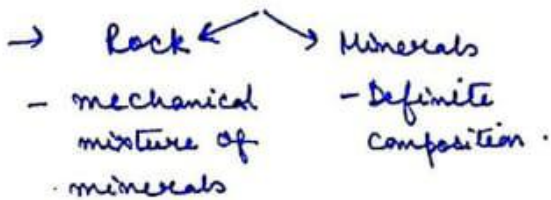
→ Regional disparity - Refer Ch. 1

   Regional differences can not be taken as regional
                                                disparity.

   because, diversity of
   landform in a country.

   eg. Japan → Human factor led to development
      (detailed) - Refer Ch-1

→ Minerals → Natural process
  created → Human intervention ⊗
  by

  identified → colour,
  by   density, hardness
            → solubility

→ ① Minerals

Ferrous
(iron
content)   Metallic   Non-metallic.
eg. iron   - Conducts   eg. limestone,
ore   Heat   gypsum,
                - Conducts   mica.
                  electricity
Non-   - Lustre/
ferrous   shine
eg. gold,
    silver
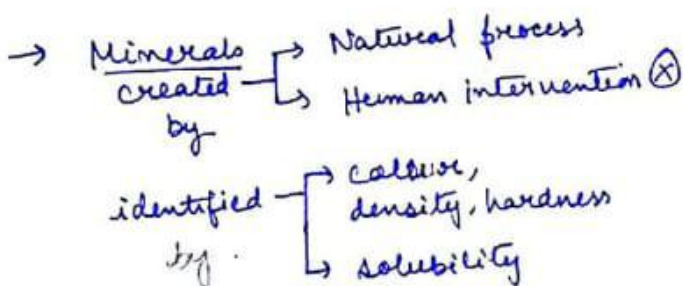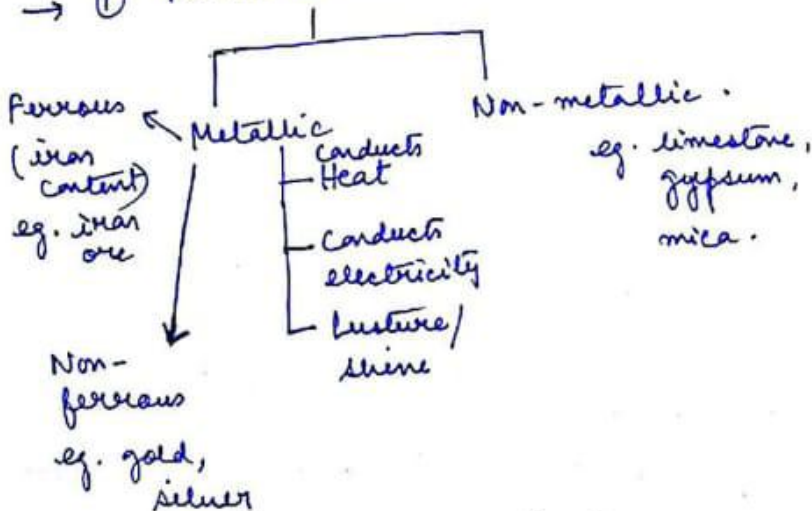
Extraction of minerals (depends on ht. under the earth's surface)

- mining
  - underground mining
    1. Shaft mining
    2. Long wall method
    3. Pillar and Room (coal)
  - open cast mining

- drilling

- quarrying (scratch the upper layer/surface) eg. Sand, gravels

drilling   shaft mining.

quarrying

open cast (dig mining (hole)
↓
(kept on extracting minerals that came on way of digging hole)

A

B   minerals present

C

D ─── eg. oil

→ **Pillar and Room**

upper Roof

↗ wastage

Pillars (Have coal)
— but, they support upper roof. Can't be extracted, roof will collapse
→ not efficient method.

→ Practised by (85% of mining.
Coal India Ltd. — not open for pvt sectors initially
— monopoly
— not using good machines, inefficiency of PSU.

→ Igneous, metamorphic Rocks | Sedimentary Rocks.
   — metallic minerals   — non - metallic
  Location — Plateau   coal / limestone /
         S. India   oil / shale oil
                      — fold mts.

→ India, China → iron → steel
           deposit

  India, iron
     deposit → steel
    Human aspect ⟶ minerals
      Technology   extraction.
      Skills

Present,
China → surplus steel → trying to dump to (dumping
                      other countries   activity)
                    cheap import → domestic
                                market
                                affected
                                ↑
                          India : increase
                                  duty.

→ <u>USA</u>, Africa : less iron, coal.
    ↓
  import : Canada

→ India : steel
  Manganese ;. Odisha
  Bauxite

→ Cu, Zn — Rajasthan
    (Khetri mines)

⇒ <u>Switzerland</u>
  • No known mineral deposit.
  → Human aspects ✓ → Best watch in globe — Swiss
                                    watch
  — Service Sector (70%)
  — Industries (30%) | Lack — Physical
  — Agriculture (Hardly 2%) | aspects
      ↓ | Developed — Human
  Best machineries | aspects.
                       | Disparity fades away

Q. How physical features as well as human aspects together responsible for regional development in any particular area. Illustrate with egs.

(I) N. America

Canada
iron deposits
000
great lakes Region.
NA
Coast Range
Rocky M/5
Appalachian
Western Cordillera
SA
→ coal (inferior quality)
- lead
- zinc
- copper
- gold
- silver

(II) S. America

Brazil ← High grade iron - ore.

Peru
copper ←- Chile

(III) **Africa**

→ oil [Libya^x, Algeria, Egypt, Nigeria]

iron, coal less

→ Somalia : Pirates

→ Kimberley : Diamond

← S. Africa : Chromium
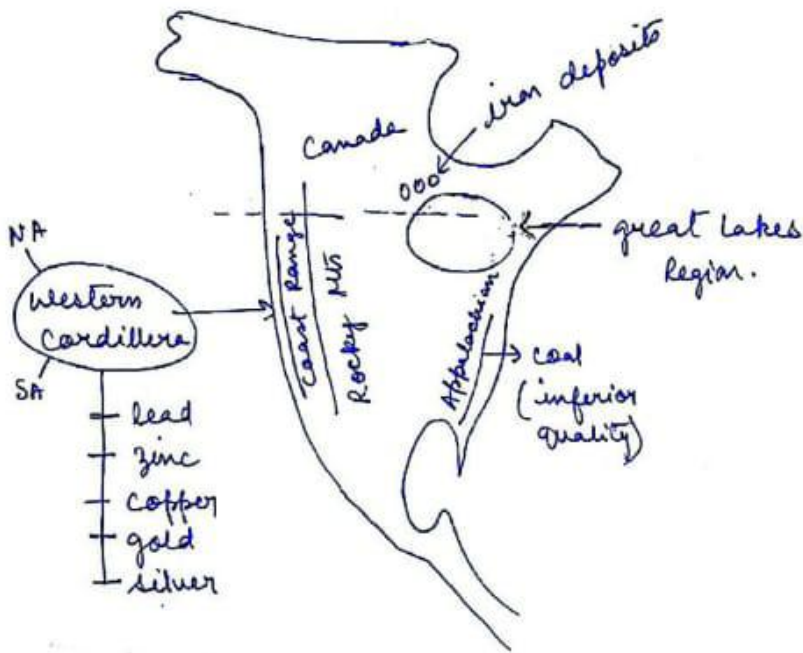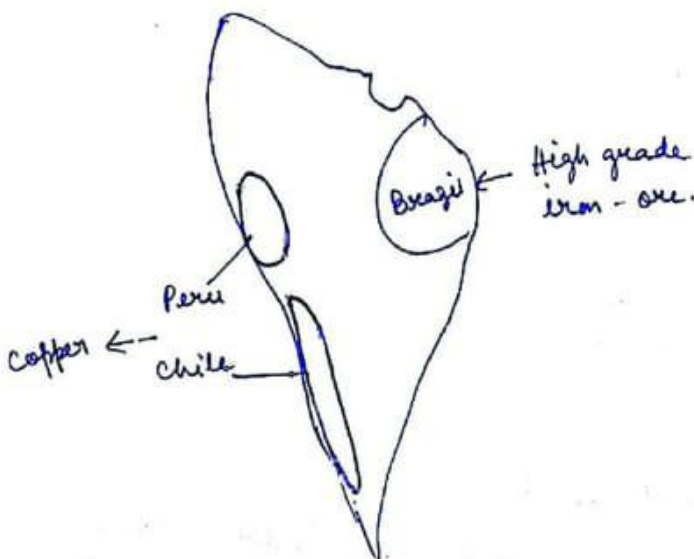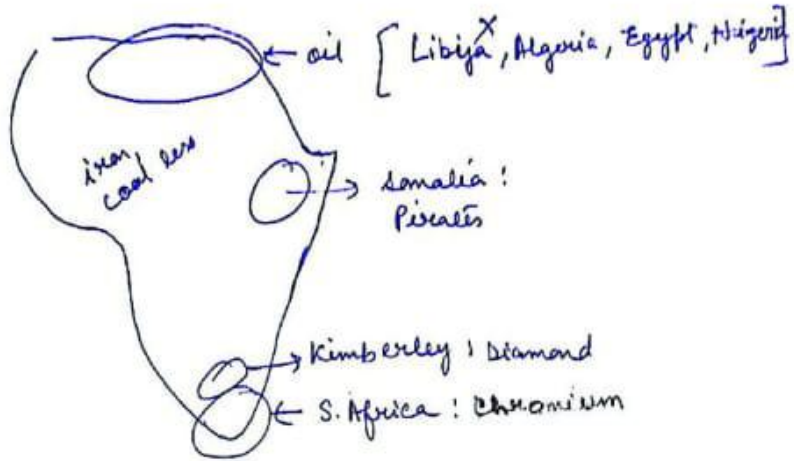
→ Lack in human aspect, less development.

(IV) Australia : Bauxite → largest producer
$$Al. → aircraft$$
— Kalgoorlie, Coolgardie — gold.

① India : → Iron
→ Coal.

Mining : not every region is suitable
↓
Factors :

① quality of deposit (sufficient deposit → economically viable deposit)

coal ⊗ < coal ✓

② quality of ore : → metals / minerals → useful
→ gangue particles → worthless
↓
better the ore, greater the minerals / less gangue particles.

③ Transportation
④ Mining technique

$$\boxed{\text{Coal}}$$

quality of coal !
→ dependant on :
  ① Carbon content:
  ② Volatile matter : V M ($\uparrow$) , quality ($\downarrow$)
             sulpher → SO_2 gas on
                     burning.

  ③ Moisture Content → MC ($\uparrow$) , quality ($\downarrow$)

<u>Based on there factors:</u>

organic content
1000 yrs
↓
2000 yrs.
↓
4000 yrs
↓
1 lakh yrs
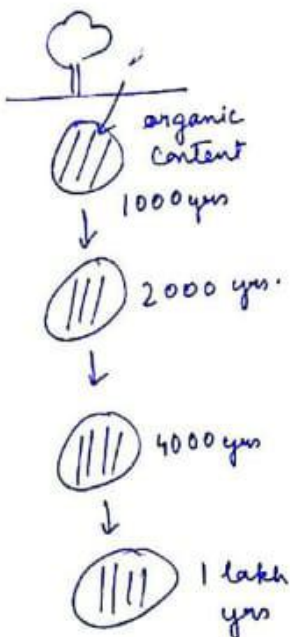
<u>Coal.</u>

① <u>Peat coal !</u>
   - Carbon - 33%
   - Soft coal
   - moisture - 60%
   - swamps / marshes.

② <u>Lignite coal</u>
   - Carbon - 45%.
   - moisture - 35%
   - Better variety.

③ <u>Bituminous Coal</u>
   - Carbon - 60-80%
   - moisture - > 20%

Carbon: 80% ↙   ↘ < 80%
   Coking   Sub
   Coal   : bituminous

④ Anthracite coal (Superior coal)
    C - 85%
    M - 7 - 10%
    India - less amount.

      Coal
      ↙ ↘ Reduction
    Power   Reaction
            Iron → steel
            — coking coal.
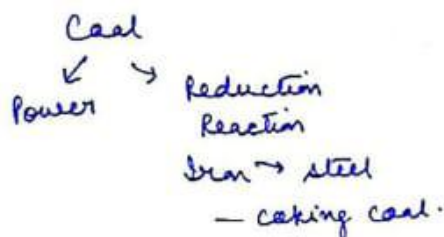
⟹ <u>Problems with coal mining in India !</u>

① Mining technique
    → We use: Pillar & Room → inefficient
             ↓
      Long wall ⊗

② Env. issues ! open cast mining : pollution issue

③ Our production is not efficient
    → Productivity of our labour force is less

④ Coal theft   unaccounted coal is being extracted
   and illegal — eg: Rat Hole mining in Meghalaya.
   mining

⑤ Labour safety, labour health (not sufficient gears are
        issue   offered to them by
                          companies)

⑥ quality of coal : Indian coal → recent in origin
                        → Impurities
                           eg - Sulpher.

⑦ inability to capture coal bed methane.
                  → CNG can't be trapped,
          CH₄   no efficient use.
          ↑
       methane
        bed
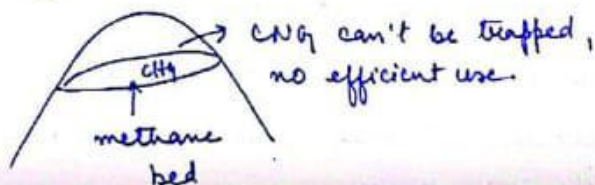
⑧ Mine Closure.

⟹ Deposits of coal.

USA - Pennsylvania (Anthracite)
Ohio (Bituminous)
Pittsburg (")

UK - Scottish Coal field
Pennines Coal field
Welsh " "

Europe - Ruhr Valley - Germany - Bituminous
Saar " - Ger / France border
Saxony → Germany → ignite
Lorrain → France
Donbas → Ukraine
Kuzbaz - Russia.

Africa - Transvaal Region
Australia - New Castle.

[India]

• Damodar Valley Coal
• Ranigonj (WB) → oldest
• Dhanbad (Jharia) → coking coal ✓
• Jhilimili Coal field → Ch. → coking coal ✓
• Bokaro
• Odisha (Talcher)
• MP ⤷ Singrauli
     ⤷ Umaria Coal field
• Singareni Coal field - Telangana
• Burdwan, Midnapur, Bankura - Peat Coal
• Neyueli - lignite

→ India : 98% Gondwana, 2% Tertiary Coal

Tertiary
Coal.
- Makum (Assam)
- Namchuk (AP)
- Cherrapunji (Meghalaya)
- Palna (Gujarat)
- Umarsara (Gujarat)

Iron Ore

① Magnetite → Black, iron 75% ↑
good magnetic property
- igneous Rock.

② Haematite → Fe - 55 - 60%
ig Rock.

③ limonite → 40% Fe ! China ✓
Yellowish

④ Siderite → 20 - 30% Fe (N. Goa)

⇒ iron → steel

① Iron ore + Coking Coal + limestone

O_2 Hot air

slag ← limestone + gangue

pig iron ← Hard + Brittle

Blast furnace
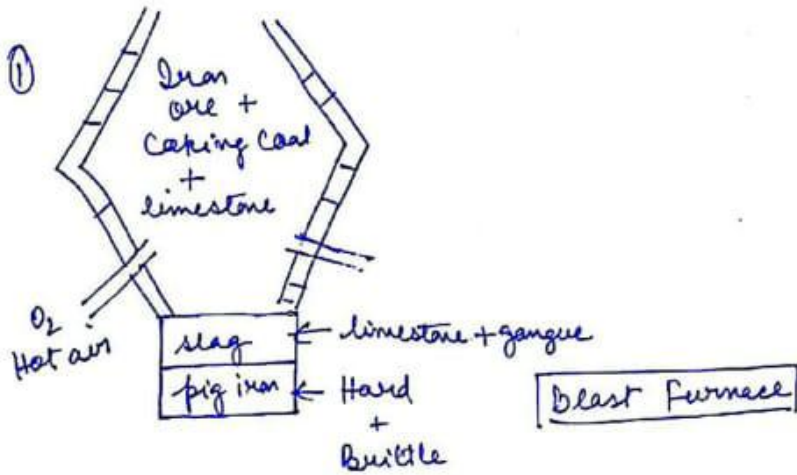
Iron → steel
- Ni : Toughness
- V : flexible
- Co : magnetic properties
- Cr : Anti-Rusting property

② Pig iron

add → steel

Bessemer converter.
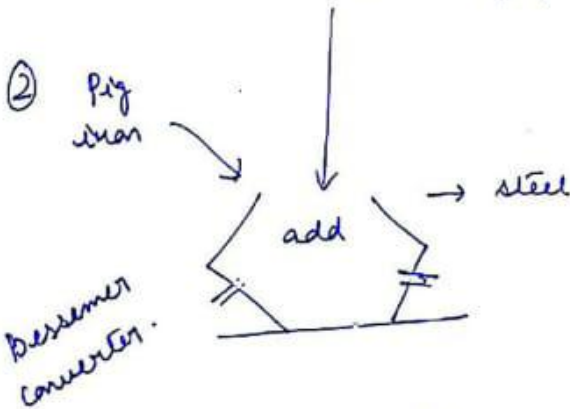
Iron → Pig → steel

① + ② → integrated steel plant.

Location

① USA — Appalachian Mts
   - G. lakes (Canada)
   - N. America (Mesabi mines / Range
                  Vermillion mines / Range)

② Canada: Quebec Region

③ Europe: Kiruna Mines (Sweden)
          Bilbao mines (Spain)

④ Russia: Kuznet Bassin

⑤ Asia: Manchuria, Wuhan — China

⑥ Australia: Mt. Golds Worthy
            Mt. John Price

⇒ India:

→ Tharkhand
      ↳ Singbhum, Hazaribag, Palamu

→ Odisha → Kendujhar, Sambalpur

   mines: Bonai mines
          Gorumahishani (TATA)
          Badampahar
          ――――――――――→ Odisha

   • Noamundi mines → (JH-Odisha)

→ Karnataka → Sandur Hospet Region
              → Shimoga
              → Chittradurg
              → Bababudan Hills

- mines

↳ Kudremukh mines

Horse   Face

↳ Kemmangudi mines
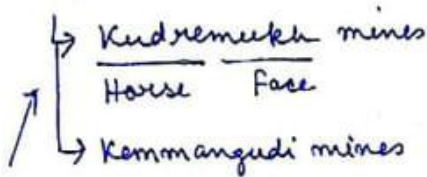
Bababudan Hills

→ CH → Bastar
    → Baila dila mine
    → Dalli Rajhra mines

→ MH → Nagpur, Ratnagiri, Chandrapur

→ Goa – N. Goa
    → Siderite, Limonite

| Bauxite | → Alumina

- Laterization
- Alternate wet and dry season.

Rain → (Si) Fe, Al
↓ Leached
down

(Fe, Al) → Hard composition of Bauxite → Al.
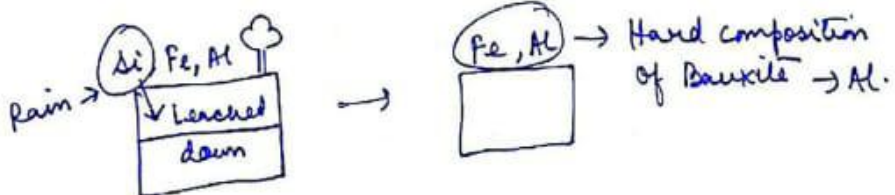
- Extraction of Al from Bauxite is energy intensive process.

(X) (✓) → Concentrated at Odisha

Regions → E. Ghats,
        Ch. Plateau
        TN
        Nilgiri
        S. Goa
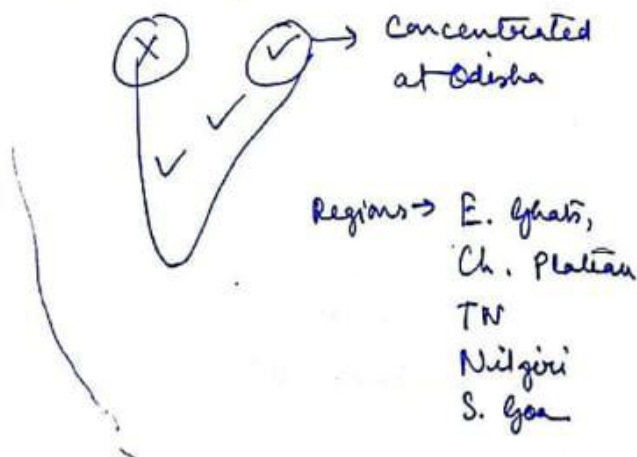
Mines: ① Odisha! → 58% M.
         ↳ Koraput, Malkan, Balangir

Koraput - Damanjodi mines
Balangir - Niamgiri Hills ← Vedanta ← govt license
                      → forest clear
                tribe : Dangaria Kondh
                     ⊗ conflict
                    Vedanta.

② MP : Balaghat Region
③ TN : Jouedi,
        Sauceray Hills
④ MH : Ratnagiri

Manganese

— abundant in India
- Chaibasa, JH
- Balaghat, MP
- Nellore, AP

Copper

—JH —
- Singbhum
- Palamu
- Dhanbad
- Ghatshila, Chaibasa.

Raj — Ka Khetri mines

Lead - Zinc

- Zawar Mines, Raj
- Canada
- US — Ozrak Plateau
- Aus — Broken Hills
- Debari mines, Raj, Ind.

Chromium
- Odisha — Sukinda mines

Gold
- Kolar mines (Kar)
- Hatti — (Kar, Raichur)
- Anantpur — AP
  Chittoor
  Guntur

Mica
Insulator property — electrical industry

→ Kodarma mines, JH
→ Nellore, AP

Uranium
- Jaduguda mines, Hazaribag.
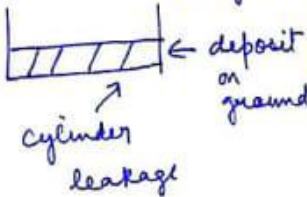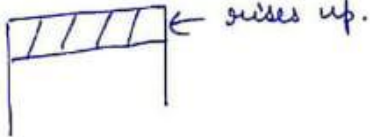
Diamond — not much in India
- Golconda
- Panna mines, MP

Limestone
- Sedimentary Rocks
- Fold mts — Aravalli, Vindhya
            — Simoga, Tumkur — Kar
              — Birmitrapur, Odisha
                — Ajmer, Raj

⇒ LPG — By product of Petroleum Refinery Process

LPG	CNG
① By product of petroleum Refinery Process	— Natural
② Major constituents: Propane, Butane	② — methane
③ Heavy, more harmful	③ Light, less harmful

cylinder leakage ← deposit on ground

← rises up.

Non - Conventional - Refer BR.

⇒ Nuclear Plants India

① Tarapur, MH
② Rwat Bhatta, Raj
③ Kundamkullam —TN [Russia]
④ Kaiga — Kar
⑤ Kakrapar - Guj
⑥ Kalpakkam - TN
⑦ Narora - up

⇒ Proposed site:

① Jaitapur, MH
② Kowvada, AP
③ Mithi Virdi, Guj
④ Chutke - MP
⑤ Haryana
⑥ Haripur, WB.

The oil resources in India :

a) Saurashtra Region.
b) KG Basin – offshore
c) Cuttack shelf –
   not much explored
d) Shillong shelf – Upper Assam

     * Himalaya too → Exploring ⊗
                   ↘ Biodiversity ⊗

    Actual   Potential

    (Profitably
    extracted)

a) S. Region

    * onshore

- Ahmedabad - Mehsana oil field, Sanand oil
- Vadodara - Ankeshwar oil field
- S. Rajasthan - Barhmerh Dist.

    * offshore

- Cambey Basin
- Mumbai offshore – Bombay High
                   ↳ Nellum High

(Sagar Matha?)

     - S. Basin oil field
       offshore Bhavnagar - Alia Bet.

b) K.G Basin : (offshore)

① Panna oil field
② Mukta oil field
③ Rawa oil field .

c) Shillong shelf (upper Assam)

- Digboi
- Dibrugarh
- Naharkatia .
- Numaligarh
- Shiv Sagar

drill — crude oil
↓
Refineries → Petrol,
Diesel,
Lubricants
Kerosene

Nearest Refinery — Bihar, Barauni : Past
In Assam ! Now.

→ Earlier : Refinery near ports.
→ Crude oil → import → so refineries located near ports [Port Based]
(save cost)

→ Market
Based oil : Barauni, Panipat. (hinterland) → [market Demand]
refinery

(Largest Refinery : Jamnagar, Gujarat .! Reliance

↳ Market Based ⇒ oil
⇒ By product

Ch-4- Agriculture

→ Agri- GDP- 15%
Industry - 30%
Service - 65%

→ Circumstances, resources, human aspect etc vary
from country to country → agri : strategic
concept·, so we can't completely shift to service
sector

→ ② Primary — extraction + production
activity   of natural resources.

🌳 → cotton
① ↓
② shirt
↓
③ sale

secondary — processing of resource
activity

tertiary — support primary, 2ndary
activity   through services.
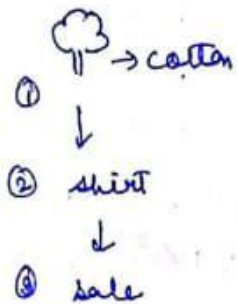
③ Physical factors can't determine — Regional disparity
↓   — Population distribution
Human factors — Land use.
↙   ↘
tech   skills

→ we can go for artificial
eg: Plantation activity.

→ India : 80% area: good for agriculture.

④ Sericulture — commercial rearing of silk worms
Pisciculture — fish — specially constructed tanks, pnds
Viticulture - grapes
Horticulture — growing veg, flowers, fruits
— commercial use.

② Why agri sector is still relevant for Indian economy?

a) India is endowed with vast natural Resources - fertile land (almost 80% of our land has agri potential, water availability - many large rivers, favourable climate etc.

→   Vast natural resource
          soil ↙   ↘ land - 80%
    Loam ↙↓↘   ↙ ⤵ Plateau
       Black   alluvial   Plain ↓ Mts
          etc   Deserts ⤵ Hardy crops
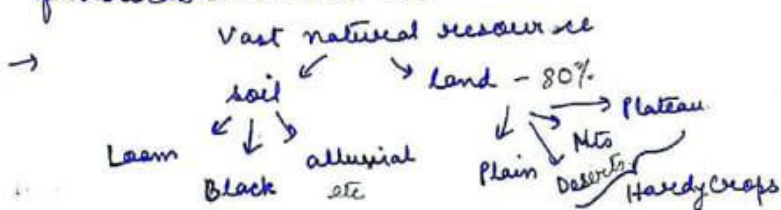
b) 60% of our population → directly dependant on agri.

c) Agri provides raw material for our industries (eg. Cotton Textile industries)

d) Agri is our traditional occupation, we are good at it, we have expertise.

e) Agri development is one of the components of rural development, 70% of population still live in rural areas.

Rural development → 80-70% - 10%
      agri development   ↓ -industry - agro-processing
            + coaching / mechanic shop/ computer centre etc.
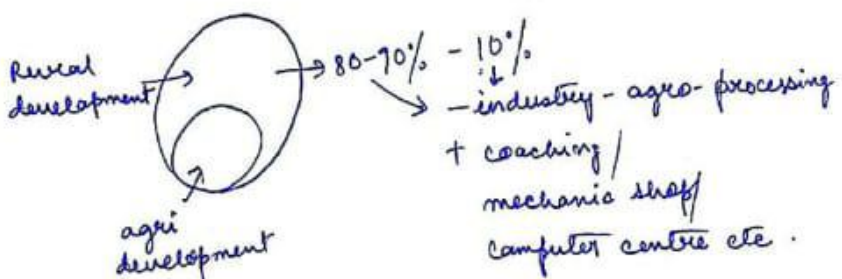
f) In absence of manufacturing sector, agri sector provides employment to unskilled workforce

g) It is a component of BOP, will help us earn dollars.

h) Focus on agri sector is imp for ensuring Food
⊗ security and Nutritional security.

i) Agri has the potential to check Rural-Urban migration. Thus it will help to do de-congest cities and de-slum urban areas.

→ 'When world will starve, India will feed'

⊗   Food security   —   Nutritional security } → if not,
↓
↓ (malnutrition)

all throughout the year { availability, accessible → Physical → Social, Affordable }

eg. — Pulse, millets, Soyabean

malnutrition
↓
disease
↓
Health expenditure/ insurance
← (govt)

so, spend here

⑤ Inputs ——→ agriculture → outputs
soil ↑ labour ← seeds etc
- ploughing
- sowing
- spraying
- crops.

⑥ Weeds — weeds near roots (to be removed)
↓
draw nutrients, water

Watering everywhere — weeds grow more
↓
drip irrigation → water efficiency
→ evaporation ⊗
→ weed control.

⑥ <u>Types of farming</u>
 — Based on — geographic condition
              — demand
              — labour
              — tech.

(i) <u>Subsistence farming</u> :
   → done to meet needs → $\begin{bmatrix} \text{if saved} \\ \& \\ \text{sold} \end{bmatrix}$ ← But S.f is
                                                        not done
                                                        for selling
                                                        purpose

                    subsistence farming
                      ↙   ↘
                    Ⓧ   Ⓥ
                                    — organic fertilizer
  — machines   — family members
  — expensive seeds   — simple tools
 (because to recover cost   — less chemical fertilizers
        → sell)
  — labour

→ intensive sf
      ↓
   ┌──────┐
   │ land │ ← small/costly
   └──────┘

  → buy limited land
  → cultivate intensively   ┌──────────────┐
  → fallow Ⓧ   │ intensive   │
  → simple tool   │ commercial   │
  → more labour   │ farming —   │
                                 │ eg. England │
                                 └──────────────┘

 → Primitive s.f.
   • shifting cultivation [Heavy Rainfall → quick regeneration]
   • Nomadic herding.

 ⇒ Market component lacking in s.f.

(ii) Commercial farming.
→ a) mixed : food + fodder + rearing livestock.
→ b) Plantations : tea, coffee, sugarcane, cashew, Rubber, Banana, Pineapple etc.

┌─────────┐
│ exotic │ ← single land
│ crops   │   ↓
└─────────┘   single crop.

(7) Major crops:

a) → Millets : Coarse grain
         ↓   ↳ not very fine
        +ve   ↳ not good to taste.

• nutritional value
• Hardy crops: survive in less Rain
                              less water
                              fluctuation in temp
• Back security   ↳ component of
• Shock absorber.   food security.
                           3 A's

→ Green Revolution ┌→ Less focus : Millet + Pulse
                   │   (drawback)
                   ↓
                 More focus
                 Rice, wheat

Same parts of lands must be given to millets
besides Rice, wheat.

→ millets → Jowar
India ↗ ↳ Bajra - driest
            Ragi (Kar)

outside India : oats, Rye.

b) Rice :

Transplantation

Nursery

lot of
water

→ transplant

Plant in
a row

water filled.

Rice: water > 100 cm
       wheat - 75-80 cm

H/W - SRI Rice cultivation.

c) Cotton :

Punjab

shift

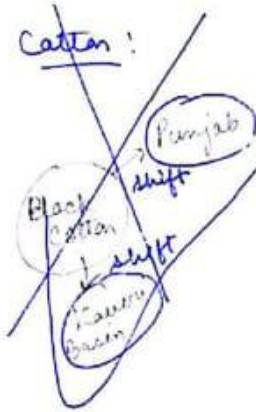Black
Cotton

shift

Cauvery
Basin

d) Tea

water drained
soil.
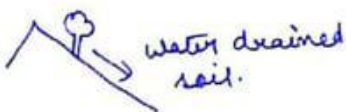
Apical Dominance → check → pluck apical buds
                                    ↓
                                branching

↑ growth
dominant ✓

← lateral
buds

①

→ ✗

②
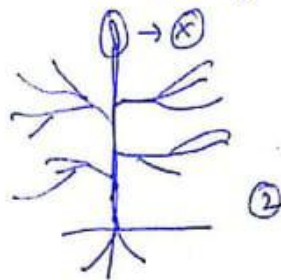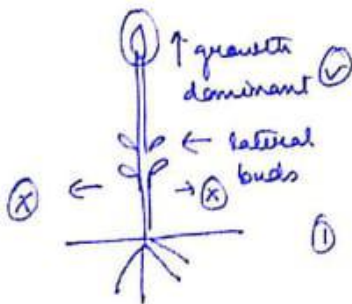
pluck apical twig ⟶

Lateral dominance
more leaves
Reqd - tea cultivation

even pluck ←
leaf

© Jute

· Water intensive — while processing.

Fresh River water

Jute Bundle [Jute seperate from stem part → Retting activity]

Hugli Belt → Jute → Dyeing industry in WB
(earlier)

⇒ Fresh water ⊗ → Bad quality jute

⇒ Bangladesh →
　　　Jute industry (↑)
　　　— R/D, fashion → Promote jute industry.
　　　　　　　　　　　　　　↓
　　　　　　　　　Cotton, jute mix
　　　　　　　　　→ good product.
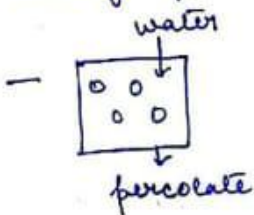
⑧ Sand	Silt	Loam
— large grain size	— medium	— finest particles
— water ... percolate	— medium	— tightly packed particle
less water retention capacity, (well drained soil)	— medium	water retention capacity more.
— Nutrients (↓)	— medium.	— Nutrients (↑)
— Relatively easier to work on		— Difficult to work on.
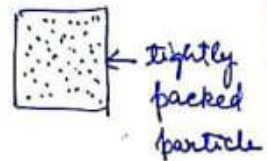
→ Loam soil
  ↳ one of the best
  ↳ sand + silt + clay
   40% 40% 20% - general %

Ⓐ Agricultural development
   ↙   ↘
  Production Productivity
  + cropped area (↑) — yield (↑)   seed fertilizer.
          — output/ Hector   ↑ ↑
  + Irrigation ✓   increase
         — output / Input efficiency
  + HYV seeds   (↑) (↓))
             ↓
          drip irrigation
         — cost saved on water
         — Rational use of
          electricity, other
          products
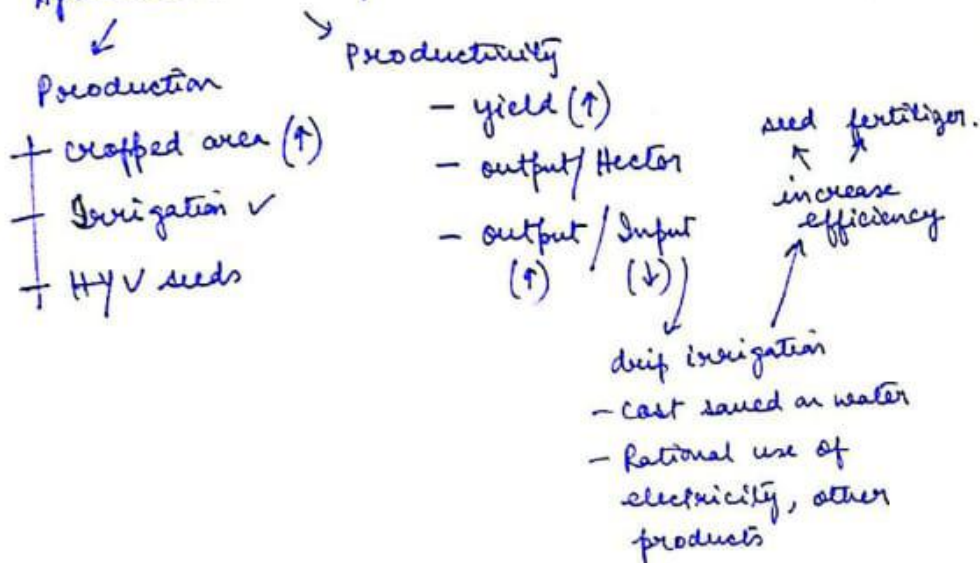
Ⓑ <u>General features of Indian agriculture</u>

(i) Dominance of subsistence agriculture
     ↳ self consumption
     ↳ market oriented (✗)
     ↳ big machineries ⊗
     ↳ simple tools ⊘

(ii) Dominance of food crops :
    ↳ Rice, wheat, other cereals
    ↳ cash- crops — cotton ⊗
    (not   sugarcane ⊗
    much   Indigo ⊗
    grown)

(iii) dominance of mixed agriculture .
  → diversity of crops ↗ Rice
          → wheat
          ↘
          Pulse

→ diversity of crops, non- crops

Rice + (hen - cattle)

+

| fish | ← Kerala
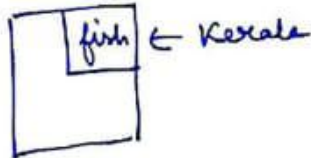
(h) Our productivity (↓)

[F → govt: no assured price
↓
yield / area effected → productivity (↓)
→ low income of farmers

• fragmented land holdings is also reasons for low productivity.

⇒ intercropping : 1 farm - more crops
— continuously land covered with crops

mixed - diverse.

Ch - 5 : Industries

→ secondary activities : raw materials → products of more value.

cotton → shirt
pulp → Notebook.
Pulp → Paper → Notebook
                ↑
            Value addition .

→ Industry (Classification)

① Raw materials :– agro, mineral, marine, forest
                    ↗
            must be
            focused in Rural area
                – Popcorn , Ketchup , Jam, Juice etc.

② Size – Capital,   Cottage : artisans .
          employment,   – Aligarh Lock
          production.   – Bhadohi Cottage Industry.
                                      – Chavcka
                                      – Kanjivaram
③ Ownership → Private   – Jaipuri Razai
              ↓ PSU
              Joint (Public +Pvt)

→ Maruti Udyog – Pvt .

⇒   cooperative   ↗ labours .
      ↓ ↓ ↘ (members) → Caretakers
eg. milk.   ↘ workers
                          ↓
                milk cooperative → Sudha
                                  → Amul
                                  ↘ Anand Milk.

④ Not all factors in industry will have equal say.

eg: iron/steel – raw materials, labours, capitals ↑

↓   eg. Banking facility

Steel → automobile   Mumbai > Kolkata
         industry,
         Transport

→ Power – Aluminium (energy intensive)
                → electricity > other factors.

→ India: welfare state: <u>duty of govt</u>
              undeveloped parts
              of India   ← attract
               eg. Batsar   industries
                          ↓
                          development of entire area

Bhilai – govt support.
Uttarakhand → pharma industry → govt
         Solan, Baddi   incentives.

Now, Toys industry, UP → combat China.

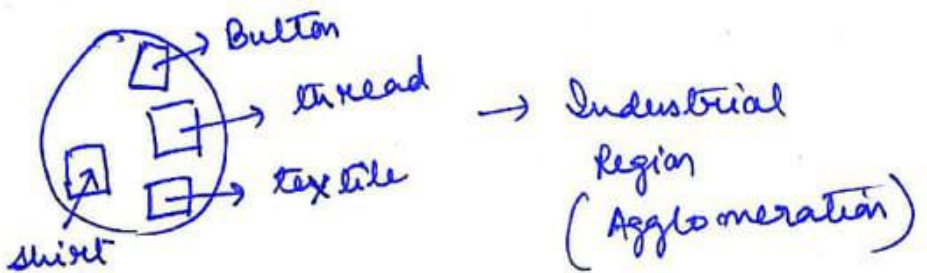+ Freight equalization Policy – Bihar

     Doesn't matter where you locate your industry, govt will always pay for transport.
[Policy Backfire]

– Industries relocated to distant places, eg. Gujarat, Karnataka from JH.

⑤ Industrial Regions

Industrial Regions emerge when no. of industries locate close to each other and share benefits of their closeness.

⇒ BosWash : → Boston + Washington [I.R.]

Industrial Regions of India

① Hoogli Belt -
- ① - Jute
- ② - Leather ↓
- ③ - DVC
- ④ Heavy Engg.

② Mumbai - Pune Region.

Centered around Mumbai

Textile → Automobile.

③ Ahmedabad - Vadodara

Textite →
different industries.

④ Coimbatore - Madurai

Textile →
different industries.

⑤ Delhi - NCR

IT/services, light manufacturing [Pack Box.
Notebooks
Shampoo etc]
Maruti Udyog
- Gurgaon.

Location of Iron-steel ind in India

It goes through different phases.

① 1st phase → I-S

I-S ind was decentralized where charcoal was utilized instead of coal. So I-S was located near forest area — Charcoal
River water etc.

② 2nd phase:

With intro of blast furnace, i-S ind used 8 parts of coal to 1 part of iron ore, so ind got located near coal mining areas

eg. Bokaro, Durgapur, Rourkella
+
Pittsburg USA,

③ The tech changed and now only 1 part of coal was reqd and 2 parts of i-ore, so now the ind moved towards iron-ore fields.

eg. Bhadrabati, Kan → Jog falls- Hydroelectricity.
Detroit - USA
Kuznet -Russia

(A) Some of the nations, like Japan emerged as highest producer of steel despite the fact they lacked coal, iron-ore.

. Countries like China also became dependant on imported coal & iron-ore.

Countries like India where coking coal has to be imported, now the industries shifted towards ports.

eg. Sanghai, China
India - Vishakhapattanam.
Tokyo - Kabe, Japan [No coal, iron-ores, Basis of tech (Human aspect)]

(B) IS ind now focused on mini-steel plants. . with
... - scrap steel as raw materials. So the industry shifted towards the market centre where scrap steel was easily available.

(C) As a part of welfare agenda, some industries were deliberately located / set up in the backward area, eg. Bhilai - steel plant was expected to act as growth pole of that backward region.

Jamshedpur - Case study - Read. ...

integrated steel plant - mining + steel

- Rust Bowl of USA

Cotton textile

Raw materials → Natural fibre. eg wool
silk, cotton
→ Artificial
linen jute

wk.

→ Handloom → Powerloom → Production (↑)
↓   ↓ ↘ cheap price.
costly   supply in
market

cotton — (moist env.) → weaving, else thread breaks in
                                              dry env.
              ↑
       locate at a place
       with moist env.
       (Mumbai)

→ Why Mumbai developed as a textile sector?

① Proximity to cotton growing region — Black soil (cotton)
   are area of Guj Plain, Bhiduna and Marathwara
   Region.

② Presence of ports — Ports help ind to import
   machinery from western world; Ports also
   helped them to export finished goods to
   outer world.
   Coal — import, — Durban, S Africa

③ Mumbai was a presidency town so infrastructure
   like → rail, paved road etc were present.

④ Mumbai traditionally had advantage of
   Parsis, Gujratis, Sindris. They were 1st to
   invest in textile sector.

⑤ Mum also attracted cheap migrant labours from Adjoining area.

⑥ Mum being the coastal location has humid climate Mumbai was able to trap the big market of w. India.

Over the years crowding and congestion around Mumbai have created issues like pollution, high land reentals and millilant trade unions This forced the ind. to locate outside the Mumbai.

① cotton → Gujarat
cultivation
(raw
material)

② Port-
Kandla

③ Rich Parsis

④ Favourable
climate /
Humidifier

⑤

⑤ Demand

⑥ Migrant
UP Bihar —
WB

Punjab → ① cotton grow.

→ Kanpur → shirts,
imports cotton

Cotton
industry

KG
Basin → irrigation — cotton
Market
Chennai Port
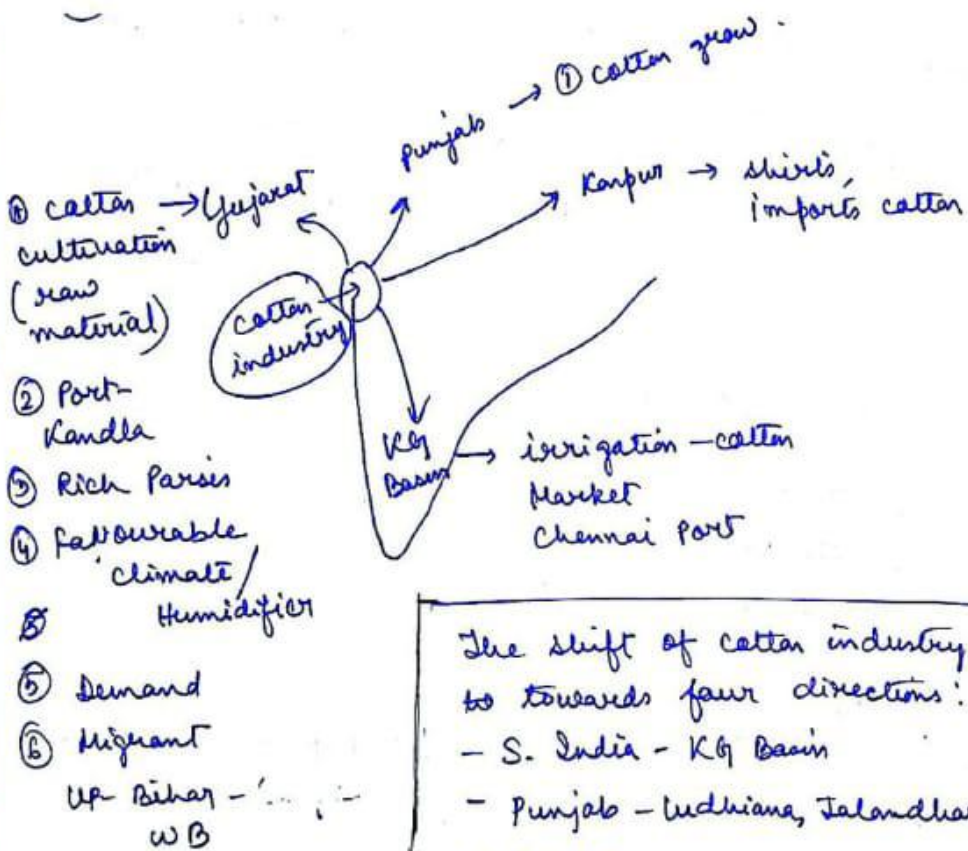
The shift of cotton industry was
to towards four directions:
— S. India — KG Basin
— Punjab — Ludhiana, Jalandhar
— Kanpur
— Gujarat.

Caimbatore — Hosiery Capital of World
Manchester of S. India.

Ahmedabad - Manchester of India

Ch : 6 : Human Resources

Ch - 1 - Demographic Dividend - Detailed.

① World's most populous countries.

China
India
USA
Indonesia
Brazil
Pakistan
Bangladesh
Nigeria
Russia
Japan.

India : Population
           Density

H/W — Top -5
         Bottom - 10

② factors affecting Population distribution - Refer NCERT

④ Political
factors : Deliberate govt Policy.
         eg : ILP → J/K → 370 abrogated
                                    ↓
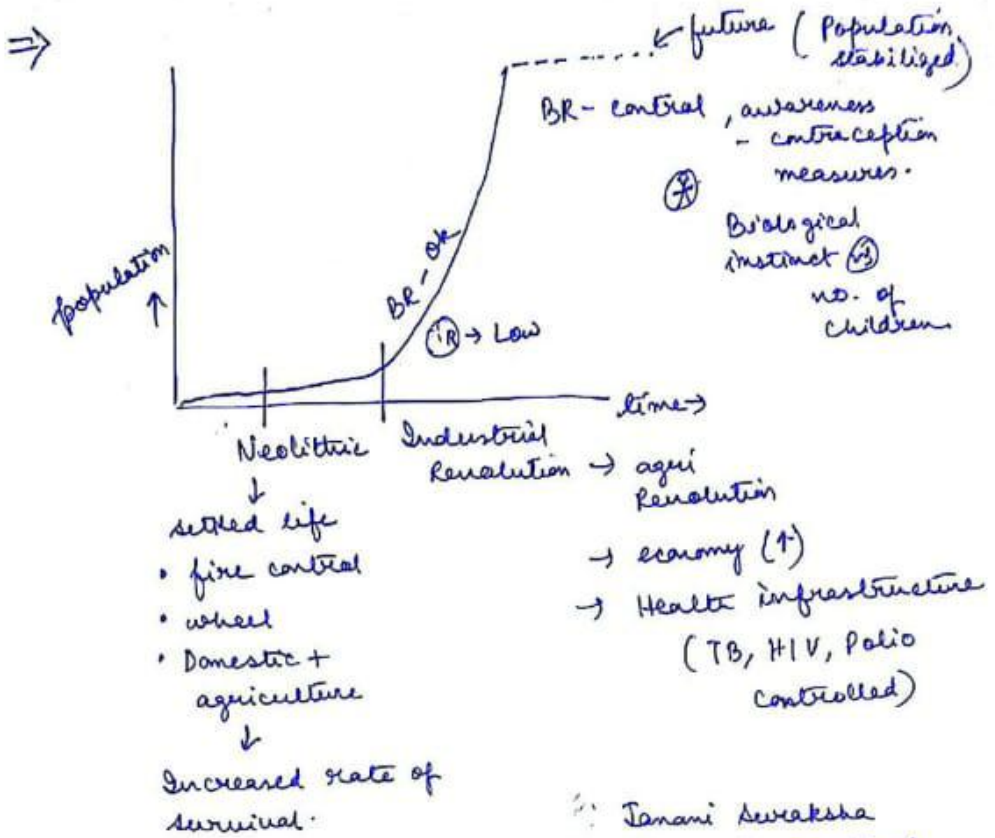   Population will change

→ Population change : (factors)

① Birth Rate
② Death Rate
③ Migration

             P
Migration ↗ Bihar → Kolkata   → Population change
          ↘ Kolkata → Gujarat.

⇒

← future (Population stabilized)

BR - control, awareness
- contraception measures.

🅰 Biological instinct 🅱
no. of children

BR - 0%

ⓘR → Low

population ↑

time →

Neolithic   Industrial
↓   Revolution → agri Revolution
settled life
• fire control   → economy (↑)
• wheel   → Health infrastructure
• Domestic +   (TB, HIV, Polio
  agriculture   controlled)
↓
Increased rate of
survival.
                      ∴ Janani Suraksha
                        Yojna - Institutional
                                Delivery
⇒ BR - DR (↓)   - Survival Rate (↑)
  = P (↑)   - IMR (↓)

┌─────────────────────┐
│ J curve - S curve. │
└─────────────────────┘

③ Pattern of population Change:

      BR   -   DR (economic aspect)
- education   ↓
- awareness   Health (govt)
- wisdom
- aspect of
  attitude change
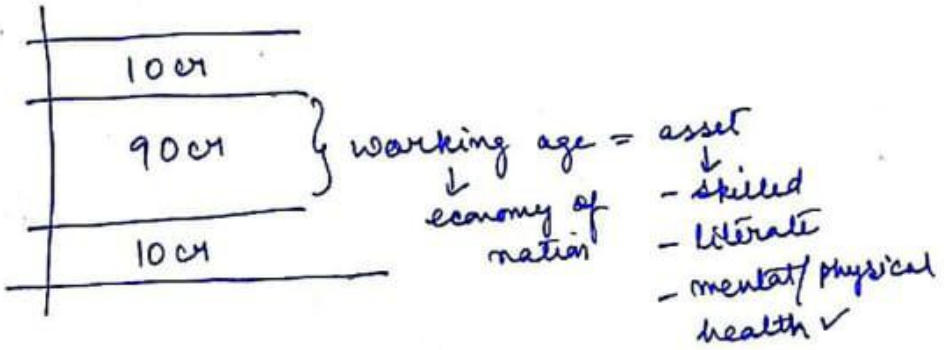
⇒ Long term

   Kenya : BR (↑) - DR (↓)
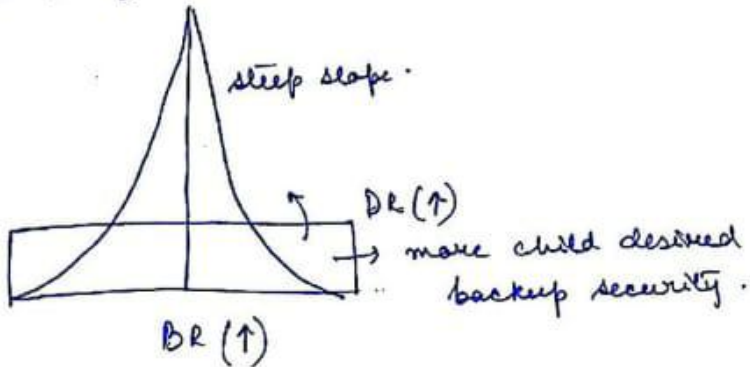   = Population (↑)

④ Population Pyramid

Refer Ch-1-DD

10cr	
90cr	} working age = asset
10cr	

working age = asset
↓
economy of
nation
- skilled
- Literate
- mental/ physical
  health ✓

geriatric care - old people care.

①

Male   female

← less people in old age, more
                                death

← working population.

→ Broad Base

8·8   8·5

Population Pyramid.

② Country →

← less child.

(I) <u>Kenya</u> [Population Pyramid]

steep slope.

DR (↑)
→ more child desired
   backup security.

BR (↑)
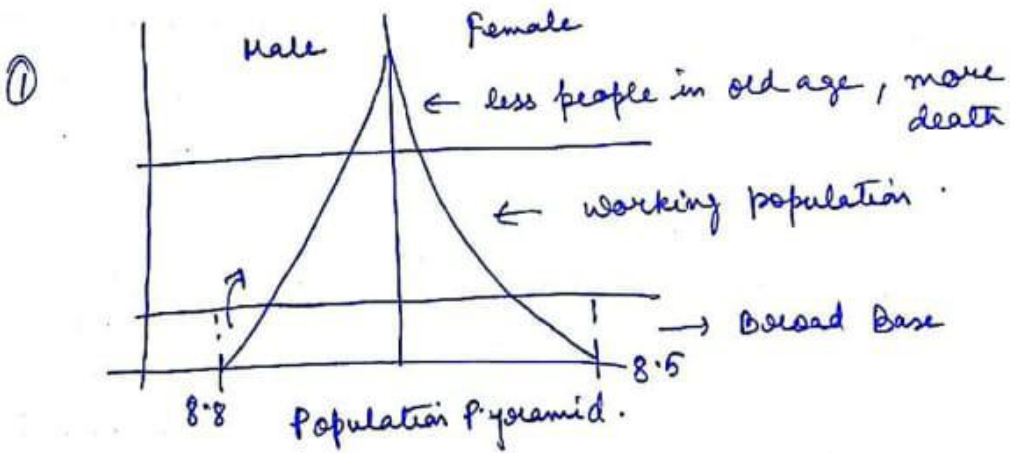
(II) Population Pyramid of India :

← strong, expanding labour
  force., DR (↓)

← Health infrastructure
  not allowing child to
  die : child → adolescent

(III) Japan - Population Pyramid.

← DR (↓).
  Pension (↑) → insurance
               schemes
               collapse
               (drawback)

← less children, marriage
  as institution has ... ...
  collapsed, universality of
  bearing child has
  collapsed → live - in -
  relationships (↑),
  good bonding, not tied
  with child factor
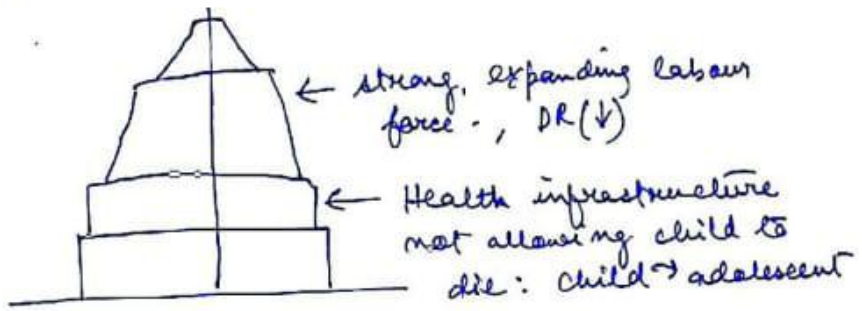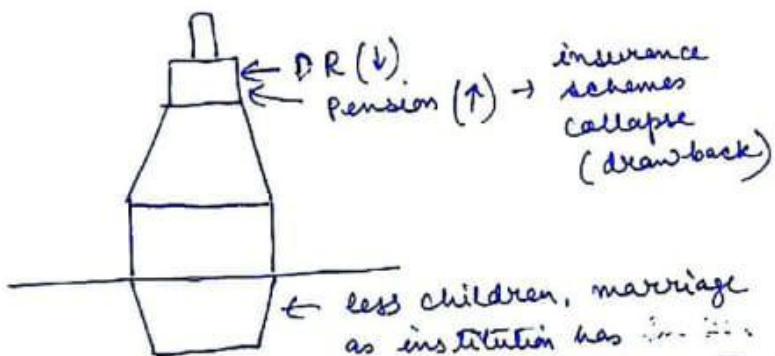
education must be
→ social + ethical too to turn
child productive member
   of society