(23)

Make them write within limit — Word limit is too less in 6 and 15 marks. In 3 marks, word limit is more.

— Work on presentation

Name - Neeraj Mandloi Date 19/11/2020

Paper III Part I

1 A

Fullerene: Allotrope of Carbon

Formula: C_{60}

Full name: Buckminsterfullerence

Shape: Sphere like (football)

(2)

1 B Rust

$$2Fe + H_2O \xrightarrow{O_2} Fe_2O_3$$

(Iron) (water) (Iron oxide) (Ferric oxide)

Rust.

(2)

1 C Use of $KMnO_4$

1. Dressing wounds
2. Use as antibacterial
3. Use as ~~antifugal~~ antifungal.

(2)

Avagadro number

Number of atoms present in 1mole of an element.

i.e. 1mole of 'C' atoms = $\boxed{6.022 \times 10^{23}}$ atom
= 12gm of 'C' atom.

CSIR

- Council of Scientific & Industrial Research
- established in 1942
- To ~~pr~~ promote research in science.
- Recently in news because of Development of Corona Vaccine

1 F Jeevan Bindi

→ Iodine bindi (generally women wear it on forehead)

→ Through Bindi, Iodine absorb into skin

⇒ Decrease Iodine deficiency.

2

1 G Given,

Today is Tuesday

To find,

Day after 62th days from now.

Solution.

∵ 7 days in a week.

$\Rightarrow \frac{62}{7} =$ 8 weeks 6 days.

⇒ 6th day from Tuesday

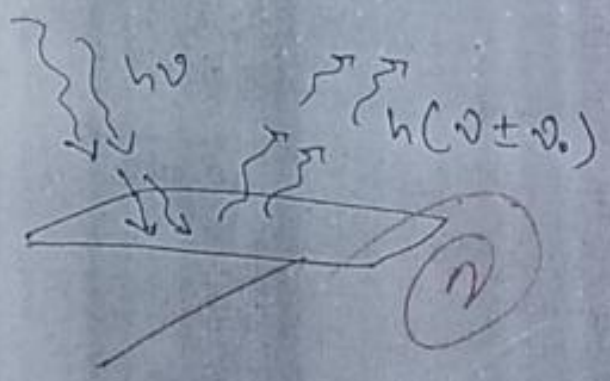
$\boxed{\text{Monday}}$

2

Ans. 61th day from now will be Monday

1 H. Raman Effect.

When light scatter from a surface its energy gets changes i.e. increase or decrease because of absorbtion by the surface.



2

$\because \nu = \frac{v}{\lambda}$

If $\nu \longrightarrow \nu \pm \nu_0$

$\Rightarrow \lambda \longrightarrow \lambda \pm \lambda_0$

where ν = frequency

λ = wavelength.

I. Ecological Print.

Total consumption of natural resources by human being in a given period, known as Ecological foot print.

Current Ecological foot print of an Year is 1.7 time of what earth produces in an Year.

i.e. Ecological Foot Print > Earth prod

J. Wind mills are useful where wind speed is high.

$\because P \propto v^3$

where P = Power
v = Velocity of winds.

Therefore, Tropical & Sub Tropical regions are useful for more generation power generation.

Countries → Norway, USA, India, China etc.

also useful where electricity connection is not reached like hilly areas.

Answer each 3 marks writing
Word limit

1. K. Project Blue flag

→ Initiative which gives a cleanliness certificate to the beach.

→ Recently Golden Beach of Odisha got Blue flag.

→ It indicates → Cleanness, hygiene, etc.

→ Total 12 Beaches get this tag in India.

2. Environment Protection Act

→ Enacted in 1986

→ To protect the overall environment

→ Identifying the Biosphere reserves

1. m. Govardhan Yojna. ?

1. N. Kalamsat :- Lightest satellite.
→ weight 1.7 kgs

→ Developed by students

→ launched by ISRO in January 2019.

1. O. Given,

Speed of train (S) = 180 km/h

Time taken to cross a man (t) = 60 s

To find,

length of train = L = ?

Solution.

$$\because \boxed{S = \frac{L}{t}}$$

$$\Rightarrow S = 180\ km/h = 180 \times \frac{1000\ m}{3600\ s}$$

$$= 180 \times \frac{5}{18}\ m/s$$

$$= 50\ m/s.$$

$$\Rightarrow S = \frac{L}{t}$$

$$\Rightarrow 50 = \frac{L}{60}$$

$$\Rightarrow L = 3000\ m$$

$$\boxed{L = 3\ km}$$

2½

Ans. length of train = 3 km.

Discuss upon writing word limit

2. A. Endocrine System

Endocrine system deals with hormones of humans.

Thomas Addison → Father of Endocrine System (1856)

later Bayliss & starling discovered first hormone.

Characteristics of Hormones.

① Ductless
② Sorce of to sink.

Function

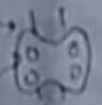
→ Each hormone perform different functions, to maintain the functions of body.

There are total 7 Glands & function

1. Pituitary → Growth hormone.

2. Hypothalamus → Hunger / thirst / sex / Temperature regulation.

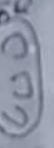
3. Thyroid → physical & mental growth.



4. Para Thyroid → Salt maintainance.

5. Pancreas → Maintain glucogen & Insulin.

6. Adrenal → Blood pressure maintanance. (Emergency gland).



7. Gonads → Maintain Sexual hormones.

Purpose, Endocrine system known as master functional system of human body.

2. B. Sun is the ultimate source of energy on the earth. therefore. Solar Energy is the most sustainable source of energy.

MP lies in tropical zone, where it gets sunshine in maximum number of days in an year.

Uses → Solar pump: farmers using solar pump under KUSUM Scheme.

→ Domestic Solar Power Generation: People are showing interest in solar plates.

→ Power plant: MP has ample possibility in solar energy. therefore, Rewa got asia's biggest solar power plant.

3½

India has targeted 175 GW renewable energy generation by 2022. Solar energy investment in MP would give a boost in it.

2. C. O- blood group holders are known as universal donors because 'O' Blood group don't have antigen & has antibody of A & B both.

i.e.

Blood contain → Antigen
→ Antibody.

Reason for universal donor ?

Blood group	Antigen	Antibody.
A	A	Anti B
B	B	Anti A
AB	AB	nil
O	–	Anti A, Anti B.

Therefore, 'O' has anti A & anti B which can be donate to other groups.

1½

③ Transport → Lighter, smaller, efficient automobiles.

→ Stronger & economic structure like bridge, road etc.

→ Traffic management.

④ Sport → Reduced friction

→ Increase Hardness

→ Decrease weight of equipments.

Nano technology is emergical technology and has vibrant future. Our Institution should give a wholestic course & invest in R&D.

7. E. Ozone layer protect earth from UV rays.

Reasons for depletion.

① Increased use of refrigerators

∵ they release CO.

$2CO + O_2 \rightarrow 2CO_2 + O^-$ (nascent oxygen)

$O_3 + O^- \rightarrow 2O_2$

② Global warming: Ozone is depleting around polar region.

∵ Global warming cause melting glaciers

⇒ O_3 affected.

③ Pollution: Overall pollution also add up to it's depletion.

By considering its importance Montreal protocol was signed and now ozone layer is recovering.

3

Word limit is too less, write more fast.

1. A Bio Signature

1. G

Geographical Information System (GIS) is a system designed to capture, analyze, store all types of geographical data by using technology in space.

Example: - Information from maps
- Global positioning System (GPS)

ISRO has launched 8 many satellites to improve GIS.

3

USE → Agriculture → Mapping
→ Net sown area
→ Weather forecast.

→ Defence → Monitoring
→ Guiding.

→ Spatial planning, Health, transport etc.

It's an emerging technology, which may change & enhance life.

Don't put Dangerous Tools

2 H. e-waste: Electronic waste as such as old mobilephones, computer, radio etc.

define Minimum

e-waste contain rare earth metal. therefore disposal is vital, because may cause toxic & severe health problem.

Step taken by & India.

- Separate bin.
- Home to home collection.
- Recycle & reuse.
- Repair

By 2050, we will produce highest e-waste. we need to develop a proper system to tackle e-waste.

2. I. Given,

Total student pass in Maths (M) = 47%

Student pass in Science (S) = 42%

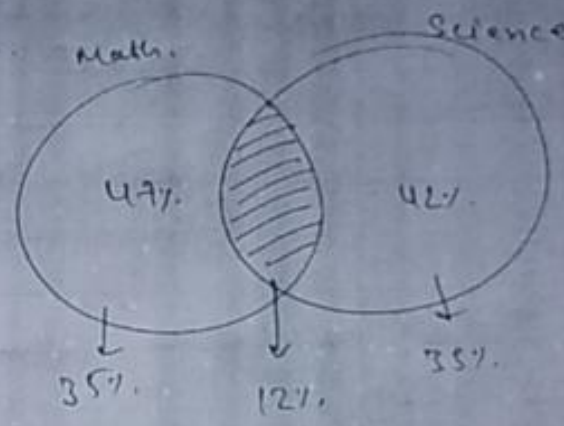
Student pass in Both sub. = 12%

Total failed student = 296

To find,

Total number of student ?

Solution.



Therefore, student passed only in maths

$\Rightarrow$ 47% − 12% = 35%

student passed only in science

$\Rightarrow$ 42% − 12% = 33%

Total passed student = 35% + 12% + 33%
= 80%.

⇒ Total passe failed student = 100 − 80
= 20%.

∴ 20% = 276 student

Now, 100% = $\frac{100 \times 276}{20}$

= 276 × 5

= 1380 students.

Rough
276
× 5
1380

Ans. Total number of student in class is 1380

3

IRNSS

Indian Regional Navigation satellite System.

ISRO Programme launched in 2013.

Under this programme a series of satellite will launched to set an effective & indigeneous navigation system. called NAVIC.

Benefites
- → Decrease dependence.
- → Increase efficiency.
- → Proper monitoring.
- → Exact weather forecasting.
- → Natural clamity warning.

This system of satellite is a land mark achievement of ISRO.

3 A) As per UNFCCC "Climate Change" means a change of climate which attributed directly or indirectly to human activity.

Concern: According to IPCC, Global temperature may rise by 1.5°C between 2030 to 2050

Causes → Natural Causes
→ Anthropogenic causes.

① Natural Causse

1.1. Change in the ~~va~~ earth's orbit.

1.2. Pollution due to Volcanic Activities.

1.3. Plate Tectonics.

1.4. Change in the pattern of Ocean currents.

(2) Anthropogenic causes.

2.1 Excessive emission of Greenhouse gases.

2.2. Change in the composition of Atmospheric aerosols

2.3. Deforestation.

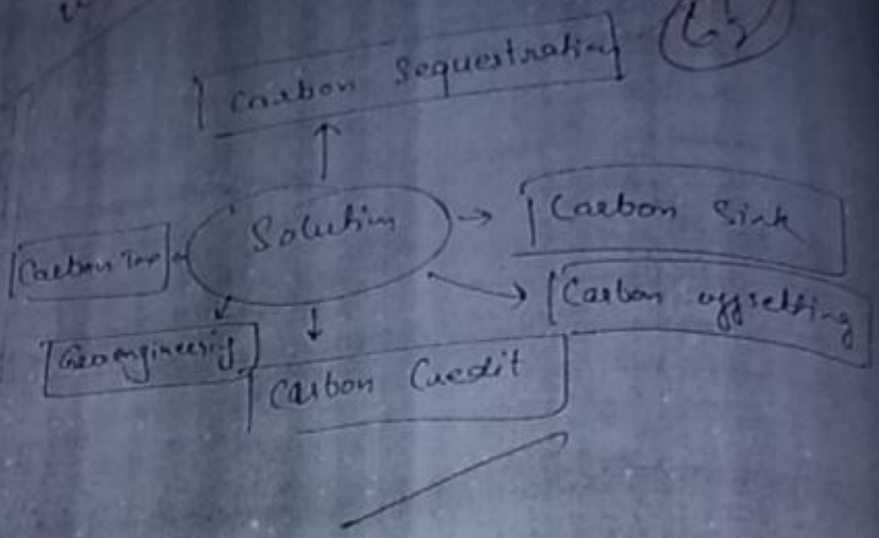
2.4. Excessive exploitation of natural resources

2.5. Policy priority to industrial growth.

2.6. Excessive emission of CO_2.

Discuss Carbon cr
Solution by detail
exceed limit is too low

(63)



Extreme weather condition are evidence to its concern, Example, Bihar faced heat waves in June & flood in August. Chennai faced water crisis. It's quite an alarm.

B. Technological institutions dedicated towards promoting science & technology in India.

① IITs: Indian Institutes of Technology premier institution provide quality technology education

② NITs: National Institution of Technology also provide technological education. every state has one Institute.

③ IISc: Indian Institute of Science promote scientific research by providing education located in Bangalore.

④ ICAR: Indian council of Agricultural research.
Head Quater → Delhi.
Promote agricultural research.

Discuss such institutions Related to Science and tech with recent Development

(5) ISRO : Indian space research organisation.
established in 1963
Head Quater in Bangalore.

Worldly one of the leading organisation in space research.

(6) DRDO : Defence research & development organisation

established in 1958.

6

→ Promote, research & Development in Defence field.

Milestones → Agni missile, Nag, Akash, Drones etc.

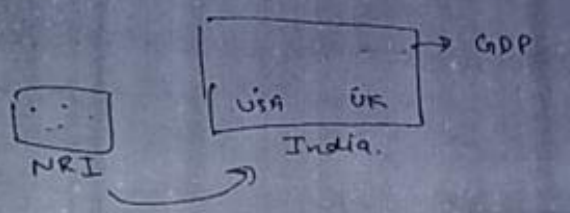
India is doing good in science & technology but we need to speed up to match global standard.

Name- Neeraj Mandloi Date - 19/11/2020

Paper III - Part B. (Economics)

1. A GNP - Gross National Product

Total amount production's price by national company within territory as well as out side the territory.



GNP = GDP - Foreign company + National company.

1. B Footloose Industries.

Name- Neeraj Maudloi Date - 19/11/2020

Paper III - Part B - (economics)

1. A GNP - Gross National Product

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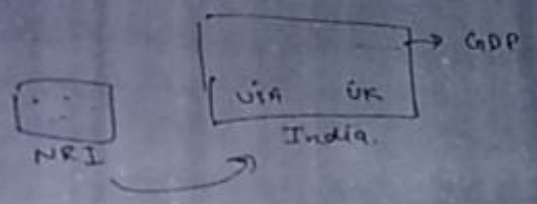


GNP = GDP - Foreign Company + National company.

1. B Footloose Industries.

C. Trade Balance → Balance in Trade of two country.

i.e. minimum gap of export to a country & import from the country.

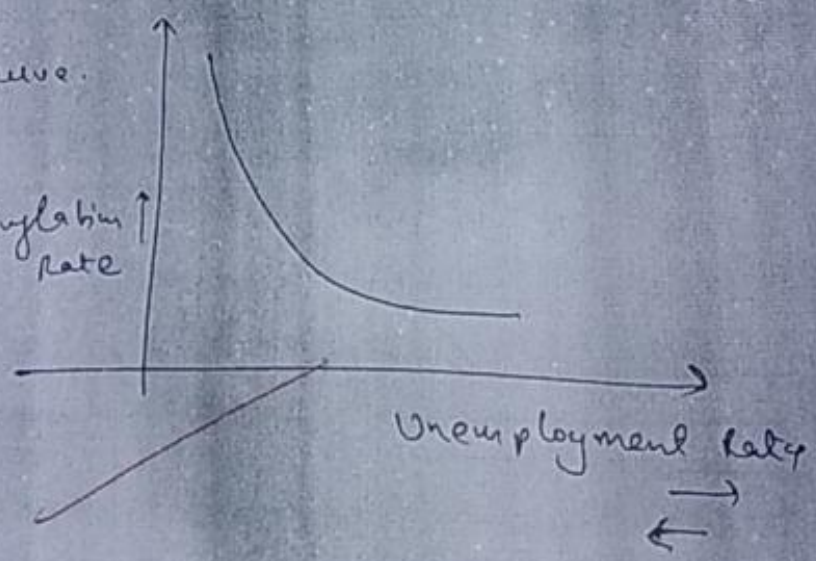
⇒ win-win situation.

D. Philips Curve.

$$\text{Unemployment} \propto \frac{1}{\text{Rate of Inflation}}$$

defined?

Curve.



1. C Hundi

?

1. f. Free trade Zone

Geographical region where trade taxes are forbidden or low.

Recently RCEP propose free trade zone.

India refuse that proposal.

1. a. Bulls → Share market is going up
i.e. share purchasing is costly.

Bears → Share market is going down.
i.e. value of shares decreased.

1. H. Buffer Stock:
- → Stock for an emergency
- → usally stock creation for controlling price in the market.
- → Regulations are imposed on Buffer stock to maintain supply.

(7)

1. I. Floating Currency.
- → Currency which depend on market for it's value.

(13)

Example: US Dollar., Rupee.

Indian rupee, earlier it was regulated currency completely before 1991.

1. J. Monetary Policy → Policy which states lending rates of the Banks.

define RBI of Monetary Policy

→ RBI govern monetary Policy

→ 4 times in an year.

→ Repo rate, reverse repo, bank rate etc.

1. K. Gender Budgeting.

1. L. Anti-Dumping Duty.

Countries use to give subsity to lowering their products price and dump it to another country, to manage in receiving cursency apply Anti-Dumping Duty.

1 M. India Vision 2020

- Document by Dr. A.P.J. Abdul Kalam. published in 1998.
- Vision to become self-relient by 2020 in the field of science & technology.
- Didnot ~~ap~~ achieved it completely so far.

2

1 N. Disguised Unemployment.

Unemployment where an individual is indulged in such employment where there is no need of him.

i.e. without him that work can be done.

1½

Example: In rural area many people doing farming in a small area.

1. D. Role of SEBI

- Protecting interests of investors in securities.
- Regulating securities market.
- Regulate the business in stock exchange
- Registering working of stock brokers.

2

2. A. The unemployment of India is 6.1% before corona period. i.e. it is even worst after it.

If we exclude corona period, Indian GDP was growing rapidly since 2003 but the employment rate is decreasing or remain steady.

Reasons → Increasing population.
every year 17 billion million people comes under unemployment age.

Structure problem secondary sector is not developed properly after 1991. reforms.

Vicious Economy
→ Primary sector
→ Secondary sector
→ Tertiary sector
with unemployment and growth
Recent Data
and its

FDI because of FDI, our GDP is slowing down growth

Skills students do not match work skills.

Growth in tertiary sector only

tertiary sector i.e service sector doing exclusively great but which is also saturated.

The biggest problem of India is now unemployment. India need to focus on job generation & entrepreneurship

2½

2. (B) MP is the central geographical region of country, showing low industrialization because.

① Location. far from coast line.

② Forest 70% of dense forest and around 30% of land under forest reserve.

③ lack of will : regulatory policy in MP.

④ lack of work force lack of skilled work force.

But the scenario is changing MP doing work towards it by creating logistic hubs, simple & ease policy, promote investment etc

define investment fund and some functional units

Difference between Industries & cottage industry.

Industry	Cottage industry.
• large scale production.	• small scale production.
• High investment	• Relatively low investment.
• Machinary intensive.	• labour intensive.
• Required large area	• require small area.
• Urban based	• Rural based.

3

Cottage industry comes unde MSME Article 42 of our constitution provide & states to the government, to promote their establishment.

1. D. Features of NEW trade policy declared in 1991.

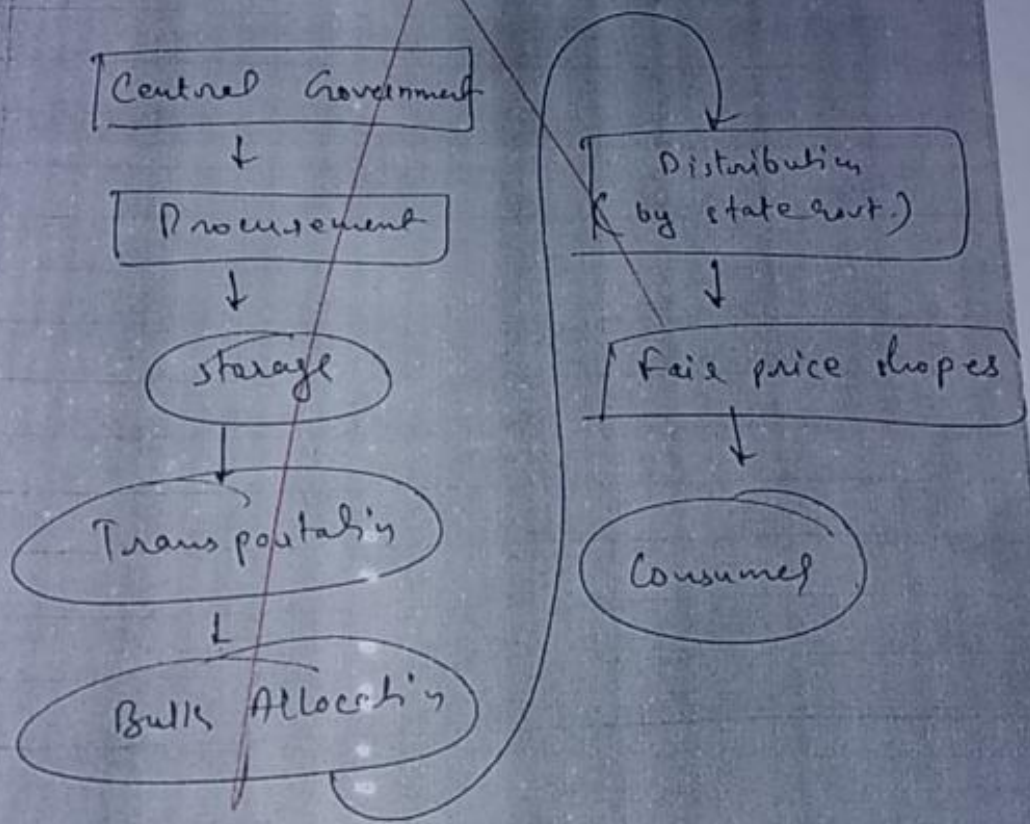
Need to crosscheck
T-PDS not PDS

2. E Targeted Public distribution System (PDS)

PDS is food security system established under the ministry of consumer affairs, food & Public distribution

PDS provide food grains at affordable prices.

Functioning. functioning. of PDS.



PDS is one of the biggest welfare programme of government helping farmers sell their produces at remunerative prices. But it is corruption prone.

Economic survey 2016-17, states strengthening existing TPDS by training & capacity building.

2 A. According to HDI India's Rank 140. one of measure reason for this is low income.

Reasons for low income

① Poverty due to unemployment. 33% population is poor.

② Population is increasing but resources are limited.

③ Regional imbalance & migration.
only few cities are developed
Therefore, Non-proportional development.

④ Historic reason. → loot & exploitive policy of colonial rule. which broke the back bone of Indian economy.

3

India is expected to grow by 8% GDP in 2021, but to fulfil the requirement India need structural changes.

(6) World Development Report.

4. **Liberalization.**

Removing the restrictions & open various sectors of the economy, is known as liberalization.

Example. Abolish License Raj etc.

Privatization

Giving up the control on resources for of government to private players is known as Privatization.

Example: PSU share selling etc.

Disinvestment

Globalisation

opening up economy for world market by attaining international competition.

Example: FDI, foreign investment.

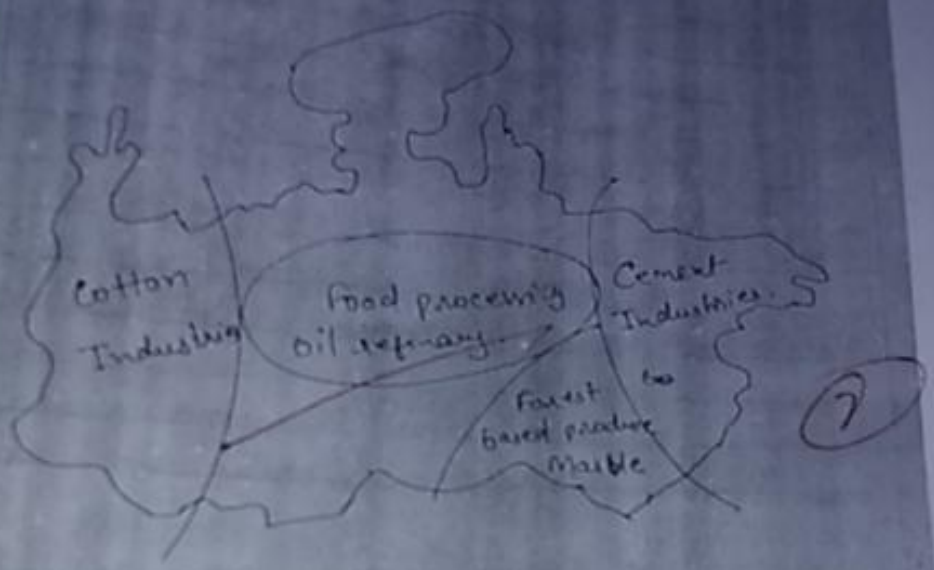
Establish state monopoly (LPG)

Yes, they are interrelated.

Liberalization leads privatization & globalisation.

India adopted these reforms in 1991.

Major industries in M.P.



7

MP carries major potential in industrial field but it is not moving with its pace.

Mendory gap industry

2. I Food security Act 2013.

Passed by Indian parliament to ensure the food supply & security to the citizen of the country.

Aim

- Provide subsidised food to every citizen.
- Strengthen Targeted public distribution system.
- Ensure food security.
- Decrease malnutrition among children.
- Purchase adequate amount of grain from farmers.

It is two way benefited act one is farmer another one is consumer.

4

A. Almost 48% of Indian population is associated with agriculture.

Features of Indian Agriculture.

1. Subsistence agriculture - rain fed agriculture.

2. Mixed agriculture (agro + livestock / fishery / poultry).

3. Non-Mechanized : Majorly labour intense.

4. low-per person productivity.
   ∵ marginal farmer
   i.e. size of land is small.

5. Division of land throughout generations
   ⇒ land fragmentations

Discuss some technical and fundamental reasons

⑥ Food crop cultivation dominent
less vegetable & fruit production.

⑦ Low agro investment

⑧ Poor forward & backward linkage

⑨ Under developed food processing industry.

⑩ Poor infrastructure, i.e. cold storage, irrigation etc.

Indian government targeted to doubling the income of farmer by 2022. In order to achieve it agricultural sector need rapid reforms.

8B. Unemployment rate in India is 5.8% of rural area which is less than urban unemployment rate but the quality employment is an issue.

Suggestions

1. Cottage Industries development.
2. Rural credit.
3. Womenisation of Agriculture.
4. Compulsory local recruitment for a company.
5. Improve infrastructure in rural area.
6. Decrease migration.

Word Count 13
for each
Plot More fund

(7) MGNREG Job security.

(8) Vocal for local.

Rural India has great potential and preserve many precious heritage we need to groom that talent.

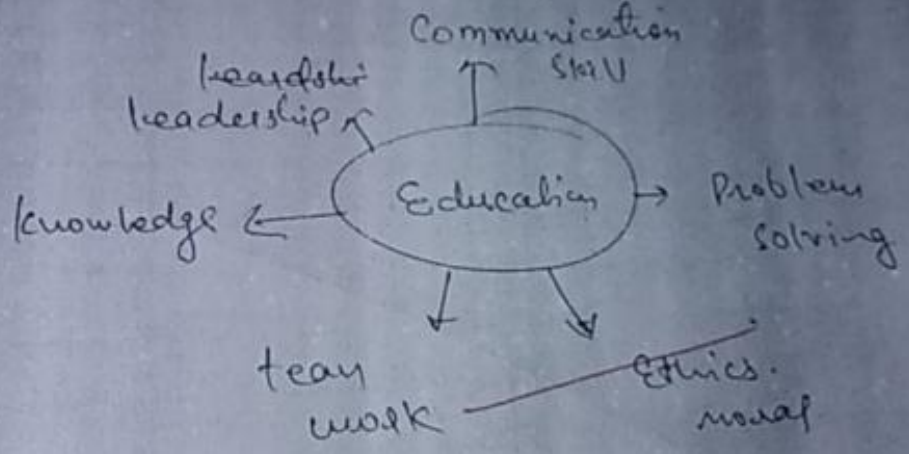
4

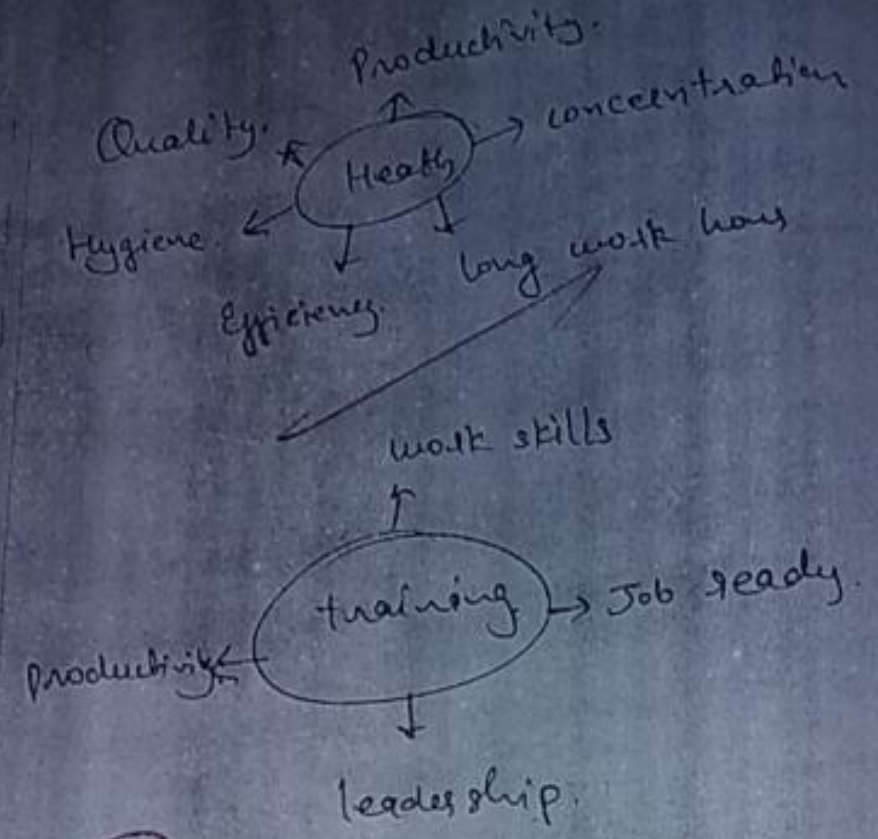
Human Capital formation

Investing in human qs capacity building to improve health & skills called human capital formation

Method of human capital formation

- Education
- Health.
- Training





(6)

Human capital investment increase 1.5 time in GDP, Therefore Human capital formation is vital in economy.