

Anurag Shrivastava

Paper - III  
Part (a)

Submission date

11-04-2020

Paper no. 02/04/2020.

(a) Central Pollution Control Board

- It is a statutory body under ministry of environment forest and climate change
- It was established on 20 March September 1974 under water act 1974 and also draw its power from Air act 1981
- It is the apex body in the field of pollution control in the country

(b) Chandri Prasad Bhatt

- He is an Indian environmentalist and social activist
- He founded Dasholi Garam Swarajya gangh in Gopeshwar in 1964 which later became the mother of Chipko movement
- He got following awards -  
Gandhi Peace Prize (2013), Ramon Magsaysay Award (1982)  
Padma Shri (1986) etc.

(c) Mitra Coates

(d) Strandhogg Bug

- It is a vulnerability in android operating system which allows real time malware application as genuine and access all kinds of user data.



### i) Abscissic acid

- It is plant hormone
- functions - stomatal closure, seed and bud dormancy, control of organ size, developmental process
- Example -  $C_{15}H_{26}O_4$

### j) Doppler effect

- A noticeable change in the frequency of sound, light and water waves as the source and observer moves
- Example - frequency of sound increases as the source moves closer to observer

### k) Lacrimal gland

- It is an almond shaped exocrine gland one for each eye
- It secretes aqueous layer of the tear film.

### m) Mitochondria

- It is an organelle in which biochemical process of respiration and energy production occur
- It is also known as power house of the cell
- Energy is stored in ATP form

### n) Hydrogen bomb

- It is a second generation nuclear bomb.
  - It was developed by Edward Teller
  - It works on the principle of nuclear fusion
- $$1H^1 + 1H^1 \rightarrow 2He^4 + \text{energy}$$



Definitions :-

Ans 2(a)

Acid - An acid is a substance that renders ionizable hydronium ion ( $H_3O^+$ ) in its aqueous solution.

Base - A base is a substance that renders hydroxide ion ( $OH^-$ ) in its aqueous solution.

Properties

Acids

- Taste sour
- PH less than 7
- Turns blue litmus paper to red
- React with bases to form salt and water
- If reacts with metal and produce Hydrogen gas
- Positively charged ( $H^+$ ) ion

Bases

- Taste Bitter
- PH greater than 7
- Turns red litmus paper blue
- Neutralize acids to form salt and water
- Negatively charged ( $OH^-$ ) ion

Examples  
Acid

Naturally occurred  
Citric acid in fruits like orange, lemon, etc, tartaric acid in tamarind, malic acid in apples, lactic acid in milk and HCL in gastric juice.  
Synthetic -  $H_2SO_4$  (sulphuric acid)

Bases

Naturally occurred  
Sodium hydroxide  
Potassium hydroxide etc.  
Household chemical bases - Baking soda ~~acid~~ or sodium bicarbonate ( $NaHCO_3$ )



Ans 2(b)

Kidney

The kidneys are among the most vital organs of human body. They are a pair of bean shaped organs. In adults a kidney is about 10cm long, 6cm wide and 4cm thick. Each kidney weighs approximately 150-170 gms.

Functions of kidney

The primary functions of the kidney is to make urine and purify the blood. Each kidney removes waste materials and other chemical. Most important functions of kidneys are follows:-

→ Removal of waste product

Creatinine and urea are the two important wastes product that can easily be measured in blood. when both kidneys fail their content will be high in blood test

→ Removal of excess fluid.

Regulation of fluid balance by excreting excess amount of water as urine.

→ Balance minerals and chemicals

kidneys play important role of regulating minerals & chemicals like sodium, potassium, Hydrogen, Ca, P, Mg etc.

→ Control of blood pressure.

kidneys produce different hormones renin,



angiotensin, aldosterone etc helps in regulation of water and salts which plays vital roles in the maintenance of good B.P. Control.

### → Red blood cell production

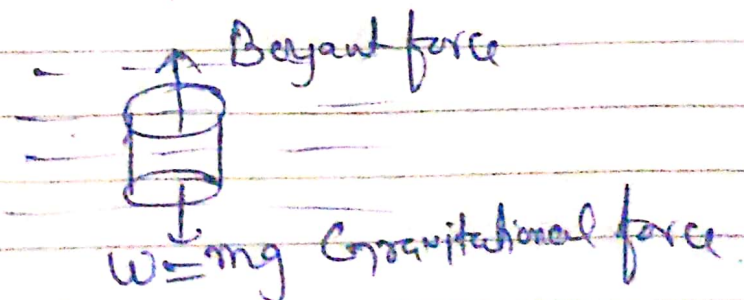
Erythropoietin hormone produced in the kidneys, responsible to produce RBCs.

→ To maintain healthy bones kidneys convert vitamin D into active form which is essential for the absorption of Ca from food, growth of bones and teeth & keep them strong and healthy.



## Ans 2(c) Archimedes Principle:-

- The principle is attributed to the mathematician and inventor Archimedes.
- In physics, the Archimedes principle refers to the law of buoyancy, the ability or tendency of something to float in water or other fluids.
- When an object is completely or partially submerged in a fluid, whether gas or liquid, it is acted upon by an upward force (buoyancy) equal to the weight of the fluid it has displaced.
- The force acting downward on the object is the weight of the object. The upward force is the one given by the Archimedes Principle. The difference between the two forces is the net force acting on the object.
- If the buoyant force is more than the weight, the object rises, if it is less the object sinks and if net force is zero the object will neither rise nor sink.





## Recent case study

The baby elephant stuck in a well has been successfully rescued by Jharkhand forest officials recently using application of Archimedes principle. The forest officials pumped water into the well so that elephant could float to the surface.



Ans (F) 1) Gaganyaan is a crewed orbital spacecraft that is expected to take three astronauts to space for a period of seven days.

- 2) For the mission, ISRO is planning to carry out two unmanned missions in December 2020 and July 2021, followed by the manned mission by December 2021.
- 3) ISRO's Geo-synchronous Launch Vehicle (GSLV) will be used for the manned mission.
- 4) If completed on the schedule, India will become the world's fourth nation to conduct independent human spaceflight after Russia, U.S.A. and China.
- 5) The first crewed flight is planned for December 2021 on a home-grown GSLV-III rocket.
- 6) The Indian Space Research Organisation has finalized the location at Karnataka's Challakere to set up a human space flight centre (HSFC).
- 7) The Human space flight centre is a body under ISRO to coordinate Human space flight Programme.
- 8) The HSFC will be responsible for the implementation of Gaganyaan project.



## Ans 2 (6) Carbon Credit

The United Nations intergovernmental Panel on Climate Change (IPCC) developed a Carbon credit proposal to reduce worldwide Carbon emission in a 1997 agreement known as the kyoto Protocol.

Definition:- It refers to a tradable certificate or permit. One carbon credit representing the right to emit one tonne (1000kg) of Carbon dioxide or the mass of another global house gas with a CO<sub>2</sub> equivalent, equivalent to one tonne of CO<sub>2</sub>.

### Working of Carbon Credit mechanism

Case-I If Company 'A' which emits one tonne less CO<sub>2</sub> or CO<sub>2</sub> equivalent than the standard level of Carbon emission, earns a Carbon credit. This Carbon credit certificate is tradable therefore 'A' can sell that credit and make money out of it.

Case-II If Company 'B' release more than one tonne CO<sub>2</sub> or its equivalent than the standard level of Carbon emission, then it will have to buy a Carbon credit.

Developed countries acts as the biggest seller of Carbon credit whereas the developed countries act as the biggest buyers of CO<sub>2</sub>. mcx is the first exchange in Asia to trade Carbon



Credits.

How carbon credit helps in reducing GHG emission:

- 1) Countries which are signatories to Kyoto protocol have laid down their norms to be met in a time bound manner. The different ways:-
- Reducing Green house gas by adopting new technology
  - Pie up with developing nation and help them in setting new technology to reduce GHG emission and thereby earning Carbon credit for themselves. But only a portion of Carbon credit will be transferred to the Company in develop country.

Ans 2(d) Patent - It is a special right given for an invention. The invention can be of any kind of product or process which provides a scientific solution to solve any problem.

### Importance of Patent

It rewards the individuals by recognising their innovations and creativity and offering them incentives and improving the lives of human beings.

### Rights of Patent owner

- The owner has the right to take decision on who can use his inventions for a specific period of time after mutual consent.
- The owner can even sell the invention.
- After some fixed duration of time the patents can get expired and the invention or ideas is open for public.

### Indian Patent office

- The office of the Controller General of Patents design and trademarks (CGPDTM) generally known as the Indian Patent office is an agency under Department for Promotion of Industry and international trade.
- Headquarters - Kolkata
- Ministry - Ministry of Commerce and industry
- 5 administrative sections



- Patent office
- Designs registry
- Trademark registry
- Geographical indications registry
- NTIPM
- Patent information system

Ans 2(i)

### Radioactive Waste

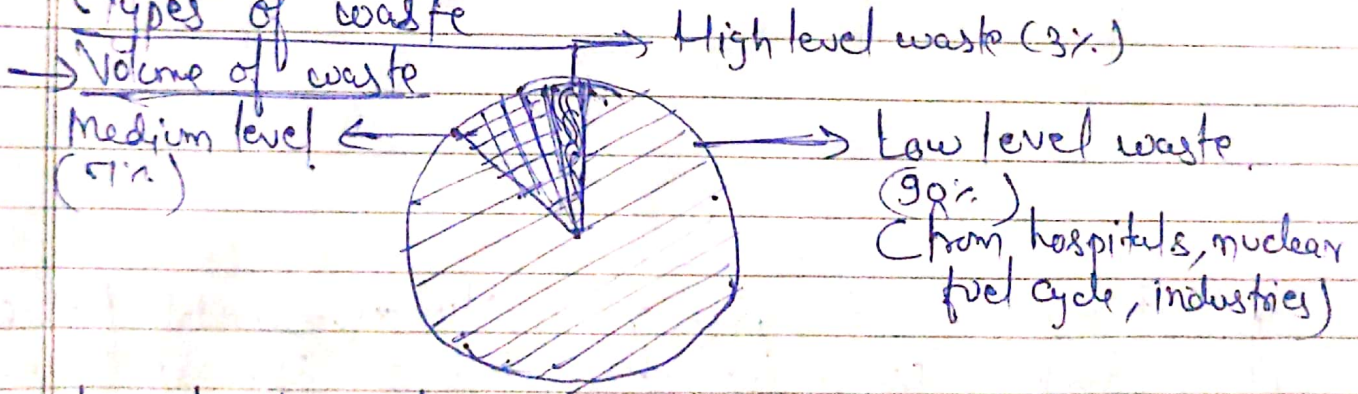
They are the waste materials containing radioactive material. It is the by-product of nuclear power generation and other applications of nuclear fusion or research nuclear technology such as research and medicine.

Examples - Uranium mine tailings, spent nuclear reactor fuel

### Causes of radioactive waste/pollution:

- a) Production of nuclear fuel
- b) Nuclear power reactors
- c) Use of radio nuclides in industries for various applications
- d) Nuclear test carried out by defense
- e) Disposal of nuclear waste
- f) Uranium mining.

### Types of waste



- Low level waste  
Less than 10 nanocurie per gram of heavy uranium containment
- medium level waste  
Contains 10-100 nanocurie per gram
- High level waste  
More than 100 nanocurie per gram

### Disposal

→ Final part of radioactive waste management process



→ Considered only when there is no intention to recycle or reuse the radioactive material

Three basic principle of radioactive waste disposal are:-

- a) Delay and decay
- b) Dilute and disperse
- c) Concentrate and contain

Radioactive waste disposal site should be properly selected to ensure its suitability and safety to public

Ans 2(a)

## Introduction

The Indian Regional Navigation Satellite system with an operational name of NavIC (Navigation with Indian Constellation) is an indigenous regional satellite navigation system that provides accurate real-time positioning and timing services.

## About IRNSS

- IRNSS (NavIC) is India's own navigation system similar to U.S.'s GPS
- An area of 1500km from the Indian boundary will also be covered by this system
- There are currently eight IRNSS satellites in geosynchronous orbit (GSO) ~~orbit~~ and geostationary orbit (GEO)
- Three of these satellites are in geostationary orbit while the remaining in geosynchronous orbit that maintain an inclination of  $29^\circ$  to the equatorial plane
- IRNSS will provide two types of services
  - a) Standard positioning service (SPS) which is provided to all the users
  - b) Restricted Services (RS) which is an encrypted service provided only to authorised user like military & intelligence services
- It is designed for a position accuracy better than 20m in India.

## Applications



- Disaster management
- Terrestrial, Aerial and marine Navigation
- Precise Timing
- Vehicle tracking and fleet management
- Integration with mobile phone
- Mapping and Geodetic data capture
- Visual and voice navigation for drivers

A Ans 3(c)

### Introduction

According to EY's latest global information security survey (GISS) 2018-19 - India edition, one of the highest number of cyber threats have been detected in India, and the country ranks second in terms of targeted attacks. Although banking and telecom are the most attacked sectors but manufacturing, healthcare and retail have also faced a significant number of cyber attacks.

### Important definitions

Cyber security :- It is protecting cyber space including critical information, infrastructure from attack, damage, misuse and economic espionage.

Cyber space :- A global domain with the information environment consisting of the interdependent network of information technology infrastructures, including the internet, telecommunication networks, computer systems, and embedded processors and controllers.

Cyber attack :- It is a malicious and deliberate attempt by an individual or organization to breach the information system of another individual or organization.

Critical information infrastructure - A computer resource, the incapacitation or destruction of which, shall have debilitating impact on national security, economy, public health or safety.



## Steps taken by the government

- 1) Cyber Surakshit Bharat initiative :- It was launched in 2018 with an aim to spread awareness about cybercrime and building capacity for safety measures for chief information security officers (CISOs) and frontline IT staff across all the government departments.
- 2) National Cyber Security Coordination Centre (NCC)  
In 2017 NCC was developed. Its mandate is to scan internet traffic and communication metadata coming into the country to detect real time cyber threats.
- 3) Cyber Swachhta Kendra : In 2017, this platform was introduced for internet users to clean their computers and devices by wiping out viruses and malware.



- 4) Training of 1.14 lakh persons through 52 institutions under the information security education and Awareness project (ISEA) - a project to raise awareness and to provide research, education and training in the field of information security.
- 5) International Cooperation :- Looking forward to becoming a secure cyber ecosystem. India has joined hands with several developed countries like USA, Singapore, Japan etc. These agreements will help India to challenge even more sophisticated cyber threats.
- 6) Information technology Act 2000  
The act regulates use of Computers, Computer systems, networks and also data and information in electronic format.
- 7) National Cyber policy 2013
- Creating a secure cyber ecosystem
  - Creating mechanisms for security threats and responses to the same national systems and processes
  - Securing e-governance by implementing best global practices and wider use of public key infrastructure
  - Promoting cutting edge research and development of cyber & security technology
  - Human resource development through education and training programme
  - Protection and resilience of critical information infrastructure with the National Critical Information



infrastructure protection centre. (NCIIPC) operating as the nodal agency.

### Way forward

- Real time intelligence is required for preventing and containing cyber attacks
- Periodical 'Back of data' is a solution to ransomware
- Using Artificial intelligence (AI) for predicting and accurately identifying attacks
- Using knowledge gained from actual attacks and build effective and pragmatic defence
- Close digital divide, enhance digital literacy and awareness
- India needs to secure its computing environment and IoT with current tools, patches updates
- The need of the hour is to develop core skills in cyber security, data integrity and data security. Also setting stringent cyber security standard to protect banks and financial institutions



### Ans 3(d) Introduction

Climate change can be referred to the changes made in the climate over a certain period of time because of human activities and actions. It is measured in terms of temperature, rainfall, snow and wind patterns in a decade or more. Humans are creating climate change by burning large number of trees, fossil fuels, deforestation etc.

#### Examples of climate change

- Rising sea level.
- Heat waves
- Plant life and mass extinction etc.

#### Effects of Climate change on India

##### a) Impact on coastal areas of India

- Nearly 40 million Indians will be at risk from rising sea level by 2050, with people in Mumbai and Kolkata having the maximum exposure to coastal flooding in future due to rapid urbanisation and economic growth according to UN environment report.
- Coastal areas are highly exposed to cyclones and typhoons, the poor tend to be more and more exposed to natural disasters
- Warmer climate, precipitation decline and droughts have resulted in drying up of wetlands



## 2) Impact on poverty

- Multidimensional poverty will increase.
- Climate change will slow down the economic growth and make poverty reduction more difficult, further erode food security and prolong existing and create new poverty traps.

## 3) Impact on rainfall pattern

- India will experience decrease in seasonal mean rainfall and an increase in mean and extreme precipitation during monsoon.
- This will increase both floods and drought.
- Freshwater resources will be affected due to combination of climate change and unsustainable practices.
- A 2°C rise in the world's average temperatures will make India's summer monsoon highly unpredictable.
- At 4°C warming, an extremely wet monsoon that currently has a chance of occurring only once in 100 years is projected to occur every 10 years by the end of the century.
- India's West Coast to the SE Coastal region could see higher than average rainfall.
- Dry years are expected to be drier and wet years wetter.

## 4) Impact on Agriculture

- There will be large reductions in wheat yield in the Indo-gangetic plain and substantial increase in heat stress for rice cultivation.



→ 8) Alterations in the flows of the Indus, Ganga, Brahmaputra rivers significantly impacting irrigation, affecting the food cultivation and life the livelihoods of millions of people.

5) Impact on health

→ Heat waves are likely to result in a very substantial rise in mortality and death from extreme weather events

6) Impact on energy security

The increasing variability and longterm decrease in river flows can pose a major challenge to hydropower plants, and physical damage from landslides, flash floods, glacial lake outbursts

7) Impact on water security

Studies have found that threat to water security is very high over central and India, along the mountain ranges of western Ghats and in north eastern states of India

8) Migration

Climate change impacts on agriculture and livelihoods can increase the number of climate refugees

Conclusion

Human-induced climate change has contributed to changing pattern of extreme weather across the globe from longer and hotter heat waves to heavier rains. From a broad perspective, all weather events are now connected to climate change. Recently Indonesia picked Borneo island



as the site of new capital which is replacing sinking Jakarta.

"We don't want these things done by 2050, 2030 or even 2021. We want this done now". - Greta Thunberg.

There is an urgent need to curb the effect of climate change and now is the time.

Submission date  
11-04-2020

Part-B-Paper-III

Paper date

Date: 02/04/2020

Amrta Shrivastava

a) Full employment

It embodies the highest amount of skilled and unskilled labour that can be employed within an economy in a given time.

(b) Pradhan Mantri Jan Dhan Yojana

- It was launched on 28th Aug 2014 under national mission for financial inclusion.
- It envisages universal bank access to banking facilities with at least one basic banking account for every household, financial literacy, access to credit, insurance and pension.

(c) Kisan Credit card

- It is a credit scheme launched in Aug 1998.
- It was prepared by NABARD on the recommendation of RV Gupta Committee to provide term loans for agricultural needs.
- It provides facility of ATM enabled RuPay Card.

(d) MP Finance Corporation

- It was incorporated in the year 1951 under State Finance Commission Act 1951.
- Headquarter - Indore
- A premier institute of state, engaged in providing financial assistance and related services to small and medium size industries.



- h) Poadhanmanti Awas Yojana (PMAY)
- It was launched on 25 Jan 2015 in a mission mode technique and provision for housing for all by 2022
  - Components - PMAY (Urban), PMAY (Rural)
  - Ministry - MOHUA and MORD.

- i) MSF
- Marginal standing facility
  - It is rate at which the banks are able to borrow overnight funds from RBI against the approved government securities
  - Current MSF - 4.65%

- j) TTPDS
- Targeted Public Distribution System
  - TTPDS maintains special character of PDS but adds special focus on BPL families.
  - It was introduced in June 1997
  - It is operated under joint liability of CG + SG (Central + state govt.)

- k) Three major reasons for ~~immigration~~ migration
- a) Push factors - drought, famine, extreme religious activity
  - b) Pull factors - opportunity of employment, better life style, good health and education opportunities
  - c) Socio-political factors

l) Three sources of rural credit

- Cooperative credit societies
- Land development banks
- Regional rural banks

m) Current contribution of primary, secondary and tertiary sector in the GDP

- Primary sector - 18% of GDP (Mainly agriculture)
- Secondary sector - 26% of GDP (Industries)
- Tertiary sector - 56-57% of GDP (Service sector)

n) TRIPS

- It is an agreement on Trade-Related aspects of intellectual property rights (TRIPS)
- It is an international legal agreement between all the member nation of world trade organization
- It provide extensive protection of intellectual property of member nations.

o) District cooperative central banks in MP



Ans 2(a)

### Financial inclusion

It is the availability and equality of opportunities to access financial services.

Example - Jan Dhan Yojana, Kisan Credit Card, Sukanya Samidhi Yojana

### Importance of financial inclusion

- Creating a platform for inculcating the habit to save money
- Providing formal credit avenues
- Plus gaps and leaks in public subsidies and welfare programmes

### Need

- 1) Bring the unbanked into the formal banking system
  - It averts exploitation in informal sector (financial unreachability) besides making available funds during need
  - Bank Credit to GDP ratio in India is still 51% as compared to 98% in China in 2016
  - As there is lack of information available with formal creditors to determine their credit worthiness
  - It provide access to digital payment service

### 2) Securing the unsecured

It ensures universal coverage of insurance for life accidents etc and of pensions and other retirement planning services

- 3) Ensuring household participation in Capital market  
Allows diversification of asset portfolio of households

- 4) Newer technologies available
- Need to reduce high cost of operations in traditional banking model.
- Excessive regulatory requirements on products and market entry and conservative regulatory approach to new technologies



Ans 2 (b) Subsidy - A subsidy is a benefit given to a party (individual or institution) by the government. It is in the form of cash payment, rebate or a tax benefit. It is an instrument of fiscal policy.

Agriculture subsidies can be categorized into direct and indirect farm subsidies.

Direct farm subsidies means giving cash to the farmers. Like MSP, cash transfers, D.B.T. etc.

Indirect farm subsidies are cheap credit facilities, agriculture loan waivers, rebate in electricity bills etc.

Need :-

- 60% of Indian economy is from agricultural based industries and 85% of farmers mainly practice subsistence agriculture, hence enhance yields.
- Subsidies for inputs like seeds, pesticides, water, electricity makes input cheaper to farmers, doubling farmers income by 2022.
- Promotion of technology - subsidised farm machinery like harvester, tractor etc. help in scientific agriculture as envisaged in DPSP.
- Infrastructure development - cheap transport facilities, establishment of storage facilities.
- Reduces risk of importing under-priced food.
- Export promotion.
- Cases of farmer suicide can be reduced by govt support.
- Food security - maintain buffer stock, implementation of NFSA 2013.

## Negative impacts of subsidy

- Subsidies do not reach the marginalized farmers
- Heavy fiscal burden of subsidy has led to stagnation and decline in public investment
- Poor targeting issues
- Subsidies have long term effect of raising global food prices and alters free marketing conditions
- Many countries like Australia, US, and UK have challenged the subsidies at the WTO which they claim are distorting trade.



## Ans 2(c) Introduction

- The MSP was first declared and used first time in 1965 as a tool for agricultural price.
- Minimum support price is the price at which government purchases crops from the farmers, whatever may be the price for the crops in the market.
- The Cabinet Committee on economic affairs determines the MSP of various agricultural commodities in India based on the recommendations of Commission for agricultural cost and prices (CAep).

### MSP covers the following crops

- Cereals (paddy, wheat, barley, jowar, bajra, maize and ragi)
- Pulses (gram, tur, moong, urad, lentil)
- Oilseeds (groundnut, mustard, tona, soyabean, sunflower, safflower, niger seed)
- Copra, Raw cotton, Raw jute & Tobacco

### Objective of MSP

- Assure remunerative and relative stable price environment for the farmers
- Encouraging investment in agriculture
- Increase production and availability of food grains
- Accessibility and affordability of food grains
- Buffer stock for emergency and PDS for food security.



Ans 2d) Factors for India's potential growth :-

- a) Capital formation :- It is the most important factor that drives the economic development of a nation. It is mainly the transfer of savings from households to the business sector that leads to increased output and economic expansion.
- b) Infrastructure : Sound infrastructure is needed in terms of good supply of power, electricity, roads, internet, railways, and robust means of communication.
- c) Ease of doing business - There should be hassle free environment to start and wind up the business in the economy. Bureaucratic hurdles in land acquisition and licenses should be minimized.
- d) Human Resource :- Skilled labour force is essential for the improved productive capacity of economy. Capability of human resources depends upon the skills of creativity, abilities, and education.
- e) Technology :- It increases productivity & competitiveness of the economy.
- f) Government policies :- Policies decides the pace and direction of economy. Like G.S.T. (Goods and services tax).



### Social and political factors

It involves customs, traditions, values, and beliefs which contribute to the growth of economy. Participation of people in formulation and execution of policies enhance the economic development.

### Conclusion

India is on the verge of reaping the benefits of demographic dividend, must launch skill development initiatives to utilize young labour force. It should improve ease of doing business and create a conducive environment for investment & better export performance.

Ans 2(F) It is an urban renewal programme by the union ministry of urban development with the mission to develop 100 cities across the country in a period of five years, and making them citizen friendly and sustainable. This scheme was launched in June 2015.

### Smart cities mission strategy

- Pan city initiative in which atleast one smart solution is applied citywide
- Develop areas step by step by -
  - a) Retrofitting
  - b) Redevelopment
  - c) Green field.

### Role in Urban development

- Smart cities concept will ensure the following needs in urban areas
  - Adequate water supply
  - Assured electricity supply
  - Sanitation including solid waste management.
  - Efficient urban mobility and public transport
  - Affordable housing supply for poor.
  - Robust IT connectivity and digitization
  - High level health facilities and education
  - Safety and security of citizens particularly women children and elders
  - Good governance, especially e-governance and citizen participation.
  - Introduction of electric vehicles

In M.P. 7 cities are selected under smart cities mission which are as follows.



→ Bhopal	→ Satna
→ Indore	→ Sagar
→ Ujjain	→ Jabalpur
→ Gwalior	

Ans 2 (b) Introduction

National food security Act (NFSA) was introduced by the government of India in 2013. It is responsible for the provision of subsidised food grains to the population.

Objective

→ Food and nutritional security in human life cycle approach, by ensuring access to adequate quantity of quality food at affordable prices to people to live a life with dignity.

⇒ Salient features of the Act

(a) Coverage and entitlement under TPDS - Targeted Public Distribution System

Upto 75% of rural population and 50% of urban population will be covered under TPDS with uniform entitlement of 5 kg per person per month

(b) Identification of household under TPDS is to be done by States/UTs

(c) Nutritional support to women and children under ICDS and MDM schemes.

(d) Maternity Benefit of not less than Rs 6000/-

(e) Grievance Redressal mechanism at district and state levels.

(f) Transparency, Accountability, Penalty, for the proper implementation

(g) Women empowerment

Challenges

→ Limited resources

→ Exponentially increasing population

→ Lack of infrastructure

→ Operational inefficiencies

→ Poor performance of the PDS



Ans 2(U)

Introduction

Located in Central India, Madhya Pradesh is popularly known as the 'Heart of India' and is a beneficiary of mega infrastructure projects, with both North-south and East-west Corridor crossing the state.

Reasons

- a) Production :- It has 11 agro climatic zones, 5 crop zones with varying land use, soil types, rainfall and water resources distributed across 52 districts of the state.
  - b) Connectivity :- Centrally located and well connected with excellent rail and road connectivity. It has robust rail network with 550 trains crossing daily, National highway network of 5000+ kms, 5 Commercial airports operating loot flight and 6 inland Container depots (ICDs).
- Infrastructure - Enabling infrastructure with 2 mega food parks, 2 food for parks, 5 agri-export zones and 45 industrial areas for the sector.

Other important reasons

- leading producer of coal, manganese, dolomite, limestone, Copper, glass sand
- Asia's thickest coal seam coalfield in Singrauli
- largest producer of agricultural products - soyabean

pulses, garlic and ranks 2nd in floriculture

→ About 63% of MP's population is the working age group of 15-59 years

→ MP is the 5th most populated state in India, is home to 6% of the country's total population. The state's total population is 573 mn



Ans 2(L) Planning :- In terms of economics, planning is the process, policymakers undertake to ensure the generation, sharing and consumption of wealth.

## Types of planning

### 1) Imperative planning

Planning process followed by the state economies (i.e. the socialist or Communist) is known as the imperative planning. It is also called directive or target planning.

#### Basic features of imperative planning

- Quantitative targets of growth and development
- States control everything
- No role of the market
- No private participation e.g. China

### 2) Indicative planning

It aims to coordinate private and public investment and output plans through forecasts or targets.

#### Basic features of indicative planning:-

- (This is followed by mixed economy)
- It works through the market (price system)
- Side by side setting quantitative target.
- Private participation
- e.g. India, France, Japan.

### 3) System planning

Gives less emphasis upon the social and institutional dimensions like Caste, creed, religion, language etc.



Ans 3(b)

Introduction

The agriculture is the most important sector of Indian economy. Around 50% of the people in India are farmers either as vocation or as workers. Its contribution to the GDP is only 18% but it provides employment to around 50% of the country's work force. It provide food to people of India. India is the largest producer of pulses, rice, wheat, spices etc in the world. Around 12% of export earnings are from agricultural sector. In 2018 india accrued 14.6 billion dollar trade surplus from agriculture.

Importance of Agriculture in Indian economy1) Contribution to national income:-

From the very beginning, agriculture is contributing a major portion to our national income. In 1950-51 agriculture and allied activities contributed about 59% of the total national income. Although the share of agriculture has been declining gradually with the growth of other sectors but the share still far more than compared that of developed countries.

For example - The share declined in following ways

54% - 1960-61

48% - 1970-71

40% - 1980-81

18% - 2008-09

whereas in UK, USA agriculture contribute to only 3%.



of national income of these countries

## 2) Source of livelihood

43.21% of the total population employed in agricultural activities in 2019, according to World Bank collection of development indicators.

## 3) Source of food supply

Agriculture is the only major source of food supply as it provides regular supply of food to such a huge size of population of our country. It has been estimated that 60% of household consumption is met by agricultural products.

## 4) Commercial importance

Indian agriculture is playing a very important role in both internal and external trade of the country. Agricultural products like tea, coffee, sugar, tobacco, spices, Cashew-nuts etc are the main items of our exports and constitute 50% of our total exports.

Besides manufactured jute, cotton textiles and sugar also contribute 20% of the total exports of India. Thus nearly ~~50%~~ 70% of India's export are originated from agricultural sector.

## 5) In Industrial development

Agriculture in India has been the major source of supply of raw materials to various important industries of our country. Cotton and jute textiles, sugar, vanaspathi, edible oil

and agro-based cottage industries are also regularly collecting their raw materials directly from agriculture.

About 50% income generated in manufacturing sectors comes from all these agro based industries in India.



### Ans 3(c) Introduction

According to world bank, 'Poverty is pronounced deprivation in well-being and comprises many dimension'. It includes

- Low incomes
- Inability to acquire the basic goods and services necessary for the survival with dignity
- Low levels of health and education
- poor access to clean water and sanitation
- Inadequate physical security
- Lack of voice and insufficient capacity and opportunities to better one's life

In India, 21.9% of the population lives below the national poverty line in 2011

In 2018, almost 8% of the world's workers and their families lived on less than US\$ 1.90 per person per day.

#### Types of poverty:

There are two main classification of poverty:-

a) Absolute poverty :- A condition where household income is below a necessary level to maintain basic living standard food, shelter, housing.

It was introduced in 1990, the 'dollar a day' poverty line measured absolute poverty by the standards of the world's poorest countries. In October 2015, the world bank reset it to \$ 1.90 a day.



### b) Relative poverty

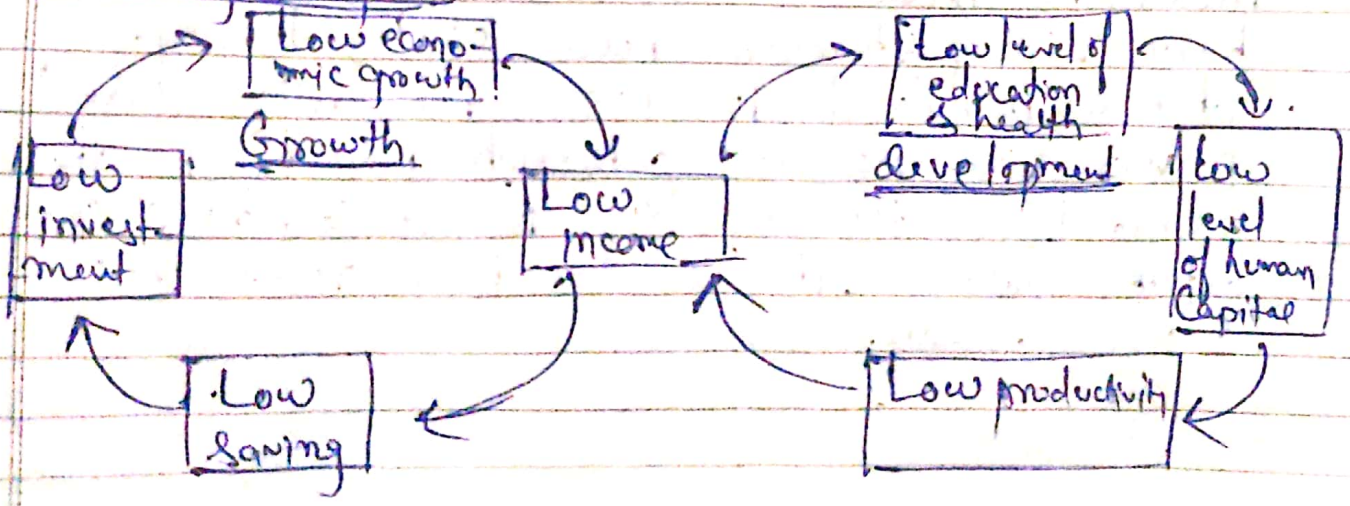
It is measured as the percentage of the population with income less than some fixed proportion of median income.

### Poverty estimation and Committees

- Poverty estimation in India is carried out by NITI Aayog's task force through the calculation of poverty line based on the data captured by NSSO under ministry of statistics and programme implementation.
- Poverty line estimation in India is based on consumption expenditure and not on the income level.
- Working Group of planning Commission 1962
- Y.K. Alagh Committee, 1979
- Lakadwala Committee, 1993
- Suresh Tendulkar Committee, 2005
- Ramrajn Committee, 2012
- Arvind Pangaria Committee, 2015

As per the Ramrajn Committee report (2012) the poverty line is estimated as monthly per capita expenditure of Rs 1407 in urban areas and Rs 972 in rural areas.

### Poverty Trap





## Multidimensional Poverty Index (MPI)

- The global multidimensional poverty index was first developed by Oxford poverty and Human development initiative (OPHI) and UNDP, under UN's flagship human development report 2010
- The MPI is released annually and replaced the human poverty index.
- It measures multiple deprivations on 10 indicators of three areas as :-
  - a) Health — Nutrition, child mortality
  - b) Education — Years of schooling, school attendance
  - c) Living standard — Sanitation, cooking fuel, drinking water, electricity, housing and assets

## Multidimensional Poverty index Report 2019

- ⇒ Global MPI 2019 released by UNDP has revealed that there are vast inequalities across countries and among the poorer segments of societies

## Key findings of MPI report 2019

- As per index 1.3 billion people in the world are still multidimensionally poor.
- Level of inequality and poverty is very high in sub-saharan Africa and south Asia
- About 34% of the world's children and 17.5% adults covered under MPI survey are multidimensionally poor.

## Indian Scenario

In the last decade between (2005-06) - (2015-16) in India, 271 million people were lifted out

of poverty but still, India has the largest number of people living multidimensional poverty in the world with 364 million people.