

DETAILS EXPLANATIONS**Paper Code: RPSCEE31 | RPSCEE31 | RPSCEM31****[PART : A]**

1. Disguised unemployment is a kind of unemployment in which there are people who are visibly employed but are actually unemployed. This situation is also known as hidden unemployment. In such a situation more people are engaged in a work than required.
2.
 - Dairy processing
 - Small scale industries
 - Educational activities
 - House hold or non-household activities.
3. Fewer requirements of skills and education in construction activities.
4. Land acquisition in the country india is basically a process in which the union and the state government of the country is trying to acquire any private land owned by any person for the purpose of industrialization and for the development of infrastructure and other facilities.
5. The 3rd phase of PMGSY involves consolidation of through routes and major rural links that connects habitations to Gramin Agricultural market, hospitals as well as higher secondary school.
6. The basic objectives of RTI are :
 - Empowerment of the citizens.
 - Prevention and elimination of corruption.
 - Promotion of transparency in the functioning of the government.
 - Making the democracy work for the people in its real sense.
7. An unconnected Habitation is one with a population of designated size located at a distance of at least 500 m or more from an all weather road or a connected habitation.
8. Technology assessment has been defined as a form of policy research that examines short and long term consequences of the application of technology.
9.
 - Uneven growth.
 - Weak financial position
 - Lack of public support
10. The water footprint is defined as the amount of fresh water used to produce the goods and services, by the individual/community or business.

11. Challenges faced by coal based thermal power plant in Rajasthan:
 - Waste Management
 - Labour safety
 - Quality of fuel
 - Suitable location
12. Structures which are constructed by using processes that are environment friendly, are resource efficient throughout the building life cycle from siting to design, construction, operations, maintenance etc are called Green buildings.
13. Goals of disaster management :
 - Pro-active plans to mitigate various business risks.
 - Minimizing loss via more effective preparedness and response.
 - Creating more effective and durable recovery.
14. Problems of rural industries :
 - Lack of infrastructural facilities.
 - Lack of Technical knowledge.
15. System application and product in data processing (SAP) is a project management software tool that integrates with other components of SAP enterprise resource planning system. The tool is an on-premises functional module or component of the SAP ERP system and allows users to direct funds and resources where needed and control each stage of the project to ensure punctual delivery within budget.
16. Joint implementation mechanism defined in Kyoto protocol, allows one country can invest in a emission reduction project in any other country as an alternative to reducing emission domestically.
17. The objective of this Kusum Yojana is to provide farmers with advanced technology to generate power. The government of India has launched this scheme to subsidise the farmers with solar irrigation pumps in their farms.
18. It is the area developed in lake or ocean due to thermal pollution, eutrophication in this area O_2 level drops below certain level and living organisms like plants or animals can't survive in that area.
19. It is the angle at which total revenue line or sales line intersects the total cost line. If the angle is large, it is an indication that profits are being made at a high rate, on the otherhand, if the angle is small, it indicates that less profits.

20. Project that require environmental clearance from central government are given below :
- Industries
 - Mining
 - Thermal power plants
 - Infrastructure and Coastal Regulation Zone (CRZ)

[PART : B]

21. The objective of implementing the NREGA 2005 are :
- To increase the income and employment of people.
 - NREGA aims to provide employment of 100 days. If it fails to do so, it will give unemployment allowances to the people.
 - The central government made a law implementing the right to work in 200 districts.
 - Every state/region can develop tourism, regional Craft, IT etc. for additional employment.
22. In the following ways public sector contributes to the economic development of a Nation :
- It promotes rapid economic development through creation and expansion of infrastructure.
 - It generates financial resources for development.
 - It creates employment opportunities.
 - It ensures easy availability of goods at moderate rates.
 - It encourages development of small, medium and cottage industries.
 - It contributes to community development i.e. to the human development index (HDI) via health and educational services.
23. The main object of the factory act, 1948 is :
- To ensure adequate safety measures.
 - To promote the health and welfare of the workers employed in factories.
 - To regulate the working conditions of the workers employed in factories.
 - The act also makes provisions regarding employment of women and young persons, annual leave with wages etc.
24. Challenges in implementation of 5-S :
- Lack of management support.
 - Lack of poor communication.
 - Gap between management and employees.
 - Lack of training and awareness of 5-S.
 - Resistance to change.

25. Challenges in setting up refinery cum petrochemical complex in Rajasthan :
- Availability of technologies.
 - High capital input
 - High capital cost
 - Availability of Raw material/feed stocks.
 - Skilled man power.
 - Water requirement.
26. The advantages of intensive farming :
- High crop yield
 - More food variety we can produce
 - More efficient method as compare to extensive farming
 - It promote sustainable supply of food.
 - Due to more production it helps to decrease food prices.
27. Wind energy conversion system is an equipment which generate mechanical energy powered by wind energy, that can be directly converted into electrical energy.
- The major components of typical wind energy conversion system include a wind turbine, a generator, interconnected apparatus and control system.
- The wind turns large turbine blades which spins a generator shaft and it produces electricity. The electricity then charged batteries, which can be directly connected to local power distribution system or to the power grid.
28. Self help group are small group of poor people, facing similar type of problem, they help each other to solve their problems. Self help group promote small saving among their members and the savings are kept with the bank. This is the common fund and it can be used to help to give loan to the member.
29. **Disadvantage of Nuclear Energy :**
- High installation cost.
 - Nuclear radiation leakage problem.
 - Nuclear waste disposal problem.
 - Operation and maintenance cost.
 - Limited nuclear material availability and difficulty in supply.
 - Skilled labour.
30. It is the process in which harmful chemicals or pollutants accumulates within the body and it neither metabolise nor excretes out an it persists with in the body for longer duration and it cause kidney failure, liver damage, rupturing of eggs etc.

31. Blue carbon is the carbon absorbed by the aquatic and coastal ecosystem like coral reefs, wetlands, mangrove, Sea grasses, lake, river, ponds etc.
Green carbon is the carbon absorbed by terrestrial ecosystem like forest, Grasslands, deserts etc.
32. Soil health card is a printed report that a farmer will be handed over for each of his holding. It will contain the status of his soil with respect to 12 parameters, namely N, P, K (macro-nutrients), S(Secondary nutrient) Zn, Fe, Cu, Mn, Bo (Micro nutrients) and PH, EC, OC (physical parameters). Based on this, the SHC will also indicate fertilizer recommendations and soil amendment required for the farm.

[PART : C]

33. The importance of employment generation programmes in poverty alleviation efforts in India are as follows:
- (i) ***Direct Relationship between Employment and Poverty Alleviation*** : There exists a positive relationship between employment and poverty alleviation. If government aims at creating new employment opportunities, then more people will be employed that will raise their income and, thus, will pull them above the poverty line.
 - (ii) ***Higher Standard of Living*** : With the increase in income, consequent to the new employment opportunities, poverty trodden people can enjoy higher standard of living and greater accessibility to education, better health facilities, proper sanitation, etc.
 - (iii) ***Reduce Rural-Urban Migration*** : Poor people tend to migrate from rural to urban areas in sought of better employment and earning opportunities. This creates undue burden on the urban areas to provide ample job opportunities to these migrants. Failure of this leads to formation of informal sector that makes these people more vulnerable in the urban areas. A positive point of employment generation programmes is that it generates ample employment opportunities in rural areas so as to reduce rural-urban migration.
 - (iv) ***Creation of Durable Assets*** : The employment generation programmes aim at creation of durable assets like watershed development works, water harvesting, irrigation facilities, canal building, construction of roads connecting rural areas to urban areas and construction of dams. All these assets play an important role in the social and economic development of the country.

- (v) ***Self-sufficiency and Self-reliant Areas*** : The creation of these durable assets protects the poverty-trodden areas from natural calamities such as floods and droughts thereby facilitating these areas to be self-sufficient and self reliant.
- (vi) ***Impart and Enhance Skills*** : Most of the employment generation programmes help in human capital formation by enhancing knowledge and imparting skills to the unskilled labourers. Such skills increase the employment prospect of the unskilled labourers in the industrial and the service sectors. This not only enhances income earning capacities of these people but also alleviates poverty simultaneously.
- (vii) ***Reduce underemployment and disguised unemployment*** : Indian agricultural sector is characterised by disguised unemployment. This implies that although a labourer is engaged in agriculture but the total output won't be affected even if the labourer is withdrawn. The role of employment generation programmes in reducing disguised unemployment is very important. These programmes engage these extra labourers in economically fruitful activities, thereby, reducing unnecessary burden on the agricultural sector.

34. Light Fidelity or Li-Fi technology is a ground-breaking light-based communication technology, which makes use of light waves instead of radio technology to deliver data.

Li-Fi can compensate as the radio spectrum becomes overloaded:

- Using the visible light spectrum, Li-Fi technology can transmit data and unlock capacity which is 10,000 times greater than that available within the radio spectrum.
- The visible light spectrum is plentiful, free and unlicensed, mitigating the radio frequency spectrum crunch effect.

How it works?

- Li-Fi and Wi-Fi are quite similar as both transmit data electromagnetically. However, Wi-Fi uses radio waves while Li-Fi runs on visible light.
- As we now know, Li-Fi is a Visible Light Communications (VLC) system. This means that it accommodates a photo-detector to receive light signals and a signal processing element to convert the data into 'stream-able' content.
- An LED lightbulb is a semi-conductor light source meaning that the constant current of electricity supplied to an LED lightbulb can be dipped and dimmed, up and down at extremely high speeds, without being visible to the human eye.
- For example, data is fed into an LED light bulb (with signal processing technology), it then sends data (embedded in its beam) at rapid speeds to the photo-detector (photodiode).

- The tiny changes in the rapid dimming of LED bulbs is then converted by the 'receiver' into electrical signal.
- The signal is then converted back into a binary data stream that we would recognise as web, video and audio applications that run on internet enables devices.

The future internet :

- Li-Fi technology will in future enable faster, more reliable internet connections, even when the demand for data usage has outgrown the available supply from existing technologies such as 4G, LTE and Wi-Fi. It will not replace these technologies, but will work seamlessly alongside them.
- Using light to deliver wireless internet will also allow connectivity in environments that do not currently readily support Wi-Fi, such as aircraft cabins, hospitals and hazardous environments.
- Light is already used for data transmission in fibre-optic cables and for point to point links, but Li-Fi is a special and novel combination of technologies that allow it to be universally adopted for mobile ultra-high speed internet communications.

A dual use for LED lighting :

- The wide use of solid state lighting offers an opportunity for efficient dual use lighting and communication systems.
- Innovation in LED and photon receiver technology has ensured the availability of suitable light transmitters and detectors, while advances in the modulation of communication signals for these types of components has been advanced through signal processing techniques, such as multiple-input-multiple-output (MIMO), to become as sophisticated as those used in mobile telecommunications.

An Integrated Communication Solution :

- Li-Fi technology is being developed into a ubiquitous systems technology, consisting of application specific combinations of light transmitters, light receivers including solar cells, efficient computational algorithms and networking capabilities that can be deployed in a wide range of communication scenarios and in a variety of device platforms.

35. Rainwater harvesting is the simple process or technology used to conserve Rainwater by collecting, storing, conveying and purifying of Rainwater that runs off from rooftops, parks, roads, open grounds, etc. for later use.

Rainwater harvesting systems consists of the following components:

- Catchment- Used to collect and store the captured Rainwater.
- Conveyance system – It is used to transport the harvested water from the catchment to the recharge zone.
- Flush- It is used to flush out the first spell of rain
- Filter – Used for filtering the collected Rainwater and remove pollutants
- Tanks and the recharge structures- Used to store the filtered water which is ready to use.

The process of rainwater harvesting involves the collection and the storage of Rainwater with the help of artificially designed systems that run off naturally or man-made catchment areas like- the rooftop, compounds, rock surface, hill slopes, artificially repaired impervious or semi-pervious land surface.

Advantages of Rainwater Harvesting :

The benefits of rainwater harvesting system are listed below.

- Less of cost
- Helps in reducing the water bill
- Decreases the demand for water
- Reduces the need for imported water
- Promotes both water and energy conservation
- Improves the quality and quantity of groundwater
- Does not require a filtration system for landscape irrigation
- This technology is relatively simple, easy to install and operate
- It reduces soil erosion, storm water runoff, flooding, and pollution of surface water with fertilizers, pesticides, metals and other sediments.
- It is an excellent source of water for landscape irrigation with no chemicals and dissolved salts and free from all minerals.

Disadvantages of Rainwater Harvesting :

- Regular Maintenance is required.
- Requires some technical skills to install.
- Limited and no rainfall can limit the supply of Rainwater.
- If not installed correctly, it may attract mosquitoes and other waterborne diseases.
- One of the significant drawbacks of the rainwater harvesting system is storage limits.

36. Economic development is a process in which different sectors of the economy such as agriculture, industry, trade, transport, irrigation, power resources etc. are improving. It is related to the improvement in the economic condition of people and the country as a whole. Expanding activities such as agriculture industry and services help to develop an economy.

On the other hand social development is related to the improvements in health, education, housing, drinking water, etc. and the social status as a whole. Improvement in them may be indirectly related to economic development because if income increases, people can enjoy better health, education, nutritional food and housing. If the people are poor, they can suffer from malnutrition, sickness, illiteracy, homelessness, etc. So, the essence of economic development is the growth of output or real income per head of population.

There is a dispute among different development economists regarding the interrelationship between the social and economic development. Economist such as Zuvekas considered that there is no interrelationship between social development and economic development. According to Zuvekas economic development can occur without social development. But some other economist such as Rostow considered that economic development determines social development and social development precedes economic development. They argued that we need economic development to ensure the well-being of the society and improve standards of living and this improvement in the well-being of society leads to the economic development.

Thus we can say that economic and social development is highly interdependent. Due to the needs of social development the economic development takes place in the society. As well as the economic development leads to the social development.

We know human wants are unlimited and resources available to society are limited. Therefore, To satisfy its wants man tends towards the economic development. This results in an increase in the production of goods and services. This increase in production and introduction of new services and advancement of services leads to the social development or in other terms it leads to the improvement in the living standard of the people.

This standard of living includes various things like safe drinking water; improve sanitation systems, medical facilities, spread of primary education to improve literacy rate, eradication of poverty, balanced transport networks, increase in employment opportunities etc. Thus, the quality of life is the major indicator of economic development. Therefore Economic development and social development are complementary to each other.

We know that environment is a major content of the society. In the traditional opinion, environmental protection and economic development are mutually contradictory, economic growth must be a high environmental cost, and to protect the environment will limit economic growth.

At present, with economic development, many environmental concerns arise in today's society. Air, water, and land pollution have been worsening; the environment of wild animals and plants has been seriously damaged, many species are threatened with extinction. Deforestation and over-exploitation of mineral resources give human survival and development a real and more serious potential threat.

37. **Soil Conservation** : “Soil conservation is the prevention of soil loss from erosion or reduced fertility caused by over usage, acidification, salinization or other chemical soil contamination. Soil erosion is the greatest single evil to Indian agriculture and animal husbandry.

Certain Human Activities Accelerate Soil Erosion :

- (i) **Deforestation** : Deforestation includes cutting and felling of trees, removal of forest. Browsing and trampling by livestock, forest fires also leads to cause deforestation. Deforestation leads to large scale erosion, loss of soil nutrients and sometimes total desertification. Deforestation further leads to land degradation, nutrient and the disruption of the delicate soil plant relationship.
- (ii) **Farming** : Agriculture is a major human activity that causes soil erosion. Crops are grown, harvested, land reploughed, exposed to wind and rain. All this prevents replenishment of moisture. Agriculture also causes the worst type of soil erosion on farmland in the form of wash-off. On the arid and semiarid areas, sand blows are responsible for sand erosion does, where water is the chief agent. Consequently, a creeping effect of desertification sets in and the fertility of the land is lost progressively.

The following agricultural practices can lead to accelerated soil erosion :

- Tilling or ploughing increases the chances of erosion because it disturbs the natural soil surface and protective vegetation.
- Continuous cropping of the same land and extending of cultivation of marginal and sub-marginal lands encourages soil erosion.
- Cultivation on mountain slopes without appropriate land treatment measures such as terracing and trenching cause soil erosion and loss of soil nutrients.
- Monoculture refers to the practice of planting of the same variety of crop in the field. Monoculture practices can lead to soil erosion in three ways.

- (i) A monoculture crop is harvested all at one time which leaves the entire fields bare exposing it to both water and wind.
 - (ii) Without vegetation natural rainfall is not retained by the soil and flows rapidly over the surface rather than into the ground. It also carries away the top soil which results in soil erosion and degradation.
 - (iii) In the event any disease or pest invades the field, the entire crop is usually wiped out leaving the bare soil susceptible to water and wind.
- **Overgrazing** : It means too many animals are allowed to feed on a piece of grassland. Trampling and grazing by cattle destroys the vegetation of the area. In the absence of adequate vegetative cover the land becomes highly susceptible to both wind and water erosion.
- (iii) **Economic Activities** : Soil erosion also occurs due to economic activities. The extraction of useful natural resources such as metals, minerals and fossil fuels etc. from the land causes serious disturbance to the land leading to soil erosion and drastic changes in the landscape.
 - (iv) **Developmental Activities** : Soil erosion may also occur because of various developmental activities such as housing, transport, communication, recreation etc. Building construction also promotes soil erosion because accelerated soil erosion takes place during construction of houses, roads, rail tracks etc. The construction of such facilities causes massive disturbance to land, resulting in soil erosion and disruption of natural drainage system.
- 38.** Depreciation is defined as the reduction of recorded cost of a fixed asset in a systematic manner until the value of the asset becomes zero or negligible. Depreciation, is a decrease in an asset's value, may be caused by a number of other factors as well as unfavorable market conditions, etc. Machinery, equipment, currency are some examples of assets that are likely to depreciate over a specific period of time. A land is the only exception which cannot be depreciated as the value of land appreciates with time.
- Depreciation allows a portion of the cost of a fixed asset to the revenue generated by the fixed asset. This is mandatory under the matching principle as revenues are recorded with their associated expenses in the accounting period when the asset is in use. This helps in getting a complete picture of the revenue generation transaction.

Causes of Depreciation :

- ***Physical deterioration or Wear and Tear :***

As the assets are used their performance and quality beings to decline. Physical deterioration is also caused due to the non-judicious use of the assets. When the asset is used, wear and tear also take place from erosion, dust and decay, and etc. Exposure of assets to forces of nature like wind, rain, and sun also form an important factor in causing physical deterioration and wear and tear. No matter how much care or precaution is employed by its user, it is impossible to preserve the original form and quality of the asset.

- ***Obsolescence :***

Obsolescence means becoming outdated or obsolete. We live in the age of technology. New technologies emerge within a quick span of time. New and improved technologies make the old products outdated. We can see what the launch of I-Phone 7 has done to its predecessor I-Phone 6. I-Phone 6 has been rendered obsolete by I-Phone 7. An old machinery though in good shape may be rendered obsolete by the introduction of new technologies.

- ***Inadequacy :***

Inadequacy refers to the inability to use the same asset due to growth and change in the size of the firm. The company which manufactures 2,000 units of mobile phones will have to employ new and improved machinery if it sales increases to 10,000 units.

- ***Accidents :***

Accidents causes due to human error. No matter how much precautions and quality checks are employed by the company, some accidents are bound to happen.

39. *Main sources of radioactive waste :*

- Radioactive materials in the fields of research, medicine, industry and agriculture.
- The extraction, processing and combustion of raw materials containing naturally occurring radioactive materials.
- The operation of nuclear reactor and other facilities for research purposes.

METHODS FOR THE DISPOSAL OF HIGH AND LOW LEVEL RADIOACTIVE WASTES :

- **Incineration** : Burning radioactive waste is largely done through commercially-operated incinerators developed for this purpose, although certain large companies have the means to do this on their own. Incineration is common with low-level waste, as this material usually consists of clothing or other common items that have simply been contaminated.
- **Storage** : Over time, the radioactivity of nuclear material does decay, so storing this material until it is no longer radioactive is another way to deal with proper nuclear waste disposal. This process, called radioactive decay, depends on the amount of materials and the radioactivity level. Therefore, storage is typically only done with radioactive waste that has a shorter half-life, or the amount of time it takes for the material's radioactivity to be reduced by half. There are commercial storage facilities for this waste, while some approved companies have their own means of storage.
- **Shallow Burial** : Highly radioactive material is hard to bury, but when it comes to mill tailings, these remnants can often be buried in a specially-crafted spot nearby the mill itself. Often, this includes creating a pile of tailings, covering it with a non-permeable material like clay. The pile is often typically buttressed by a mix of rocks and soil so that it doesn't erode.
- **Deep Burial** : While shallow burials can be done with low-level waste, the most common way of disposing of high-level waste is in deep burial pits. Many countries with natural resources follow this procedure of geological disposal, which consists of burying the material deep within the earth. Oftentimes, underground laboratories are built to monitor usage and storage of the materials. However, as of now, there is *no* government that has a facility for this type of disposal, although one is being created in Finland.
- **In Water** : At nuclear sites, a common way of storing material is in water. Nearly all of these sites have a special pond or have a special pool constructed, which is a place that they can store fuel that has already been used for the process of generating power.
- **Recycling** : For some radioactive material, such as previously used fuel, certain radioactive elements can be processed or extracted for reuse. Uranium and plutonium elements have long lives, so they can be separated and recycled.

- *The Ocean* : A very small amount of liquid waste that is common when waste is reprocessed to extract usable elements is released into the ocean. This process is highly controlled, and radiation levels are deemed to be so low that they are inconsequential. However, recent agreements between companies that rely on nuclear materials have phased out this procedure.

