Day & Date of the Examination: 09.03.14 Saturday
Medium of answering the paper: English
Vehicular No. as written on the top of Question Paper
No. of Supplementary answer booklets used

Physics challenged, tick the category

B D H S C

Whether writer provided: Yes / No

Each letter be written in one box and one box be left blank between each part of the name. In case Candidate's Name exceeds 24 letters, write first 24 letters.
Certified that I have evaluated this answer-book according to the correct set of question paper and strictly as per the marking scheme.
1) Retail trading service is selling or trading of goods and consumer services directly to the consumer. These include also are meant for selling commodities directly to their final consumers, they are present both at rural and urban level. They take place through various modes like retail trading centre, mail order, order, street peddling etc.

2) Two examples of ancient trade in India are:
   1) Satapatha (known as Patna)
   2) Benares (now known as Varanasi)

3) Truck farming is growing of high valued vegetables nearby for urban markets. The special feature of truck farming is that they are small in size and their location is determined by the distance from urban centres which should be considerable by trucks overnight.
4. Last cause of acid rains is the increasing government air pollution by nitric and sulphuric contaminants released from burning of fossil fuels in industries and vehicles. These chemicals combine with water in air to form nitric and sulphuric acid and hence lowers the pH of the rainwater.

5. Digital divide is the difference in social and economic development between different regions due to unequal distribution and accessibility of opportunities and benefits arising from information and communication technology. It can be both within different countries and also within a country.
1. Kakinada Port was constructed to reduce congestion at
   Visakhapatnam Port.

2. USA is the largest trading partner of India contributing
   12.5% of total trade with India.

3. hinterland of a port is the area served by the port. It
   includes states, countries where main trading of goods
   is handled by the port. E.g., hinterland for Mumbai port is
   Maharashtra, Rajasthan, Gujarat, and other states.

4. The two ports at each end of Suez Canal.
   (North - Port Said, South - Port Tawfiq.)
10. The term road density means the length (in km) of roads per 100 km square of area. e.g., road density of India in Rajastan 2004-05 was 0.75 km/km².

11. Physical Geography studies the physical elements of nature like soil, landforms etc.

Human Geography studies the relationship between the physical world and human societies. It deals with the distribution and reason for distribution of human phenomena and various economic and social differences between different regions.

Neither of the two disciplines are independent of each other; they are interrelated and study of geography is incomplete.
Without studying both of them historistically e.g. patterns of land settlement are determined by the geography, human and resource base of a region. Therefore human geographical phenomena is directly related to physical geography.

Both the fields have derived symbolic names from the human world to describe various physical and human phenomena. e.g.:

Physical
- Eye of storm
- Deck of steamer
- Mouth of river
- Tongue of glacier

Human
- German geographers define nations as organisms and the transportation lines spread, railway or air as arteries of circulation.

Study of either of the field cannot be carried out without correlating and understanding two other completely and seeing the
Problems of agriculture like productivity arising under human geography can only be understood by studying the physical composition of ecology as it has a huge impact on it. Areas which lie in rainshadow areas or have low rainfall have low productivity. Similarly, the Australian problems and land degradation due to deforestation is caused by human activities.

2. Economic development, urbanisation of region depends upon its natural base, which has to be studied together. The types of goods an economy produces depend upon the natural resources formed by physical phenomena.

From the above examples, it is clear that there is a close interaction between elements of physical and human geography are closely related. Therefore, every planner has to take into consideration both the elements before planning as there is a close relation between these two elements of human and natural geography. Physical geography forms one altered by human activities, similarly
1. Technopoles is an area where modern high tech industry is specialized regionally concentrated and self sustained. Technopoles are one of the most developed regions of the world due to presence of high tech industry.

High tech industry refers to the modern form of industrial setup which is focused on research and development of new products and where actual workers (blue collar workers) are outnumbered by white collar workers. eg of these industries is computer aided designing, pharmaceutical, robots on assembly line etc. These industries are characterized by less lying mostly spaced.
modern industrial setup with laboratory setup instead of huge assembly line production setups.

Since megalopolis are the regions of self-sustained, highly concentrated high tech industries, they are highly developed.

Examples:
1. Silicon Forest near Seattle.
2. Silicon Valley near San Francisco.

13. Minerals are naturally occurring substances of organic or inorganic nature having definite chemical and physical composition:

The main characteristics of Indian minerals are:
1. They are regionally varied in occurrence: - The minerals in India are not found throughout the nation uniformly. Rather, the best copper-gangue plains in India is found of any minerals. Minerals are basically found in the region lying to the east of the connecting Kazipur to Bangalore. The southern Andhra Pradesh is devoid of any coal. No deposits accept Nagpur deposits. Metallic minerals are concentrated in the eastern peninsular plateau comprising the Deccan plateau. The region petroleum is found in Gujarat, Mumbai high, North Eastern states of Assam etc., South Western peninsular and North Eastern peninsular plateau are rich in iron, coal, bauxite. North Western peninsular region comprising Thar desert Rajasthan and Gujarat are rich for building rocks like calcite, granite and salt like lingshat etc.

This shows the variable distribution of minerals in India.

2. Inverse relation between quantity and quality: - There is an inverse relation between quality and quantity of minerals occurring i.e. the good quality mineral deposit is less in number.
Though minerals of average quality predominate, the mineral resource... 
less in numbers quantity as compared to sufficient quality done over taken together.

These resources once used take long time to regenerate:

Mineral resources are non-renewable and require that after once used, they take long time to be regenerated like thousands of years which makes them valuable and need further conservation efforts. Unlike agricultural commodities, they do not have a second crop.

E.g., Gold deposits were found in many countries of India but because of their extraction, they got used up and the given is devoid of gold.

Another gold-based diamond mines used to be the largest in the world, but due to frequent extraction, these mines are now devoid of good quality diamonds.
Depending upon the seasons and availability of moisture, cropping systems in India can be divided into:

- **Kharif**
  - There is no clear distinction of cropping seasons in southern India because it has similar climatic conditions throughout the year; therefore, two to three crops can be grown given soil moisture is adequate. The cropping seasons are distinct in northern India.

- **Rabi**
  - Season: June to September and they coincide with both west monsoon season since these crops are grown near monsoon season. They have high water requirement.
2. Nature of crops: The crops grown in this area are tropical and moisture suited for hot, humid temperature conditions. Examples include:

- Cotton, rice.

3. Time - These crops are grown from October to March. The growth of the crops in this season coincides with the wet season.

4. Nature of crops: The crops grown are temperate in nature and are generally supplemented by irrigation. Examples include:

- Wheat, gram.

zial

Time - This is a brief period between March to June and coincides with the summer season.
Crops - mainly fruits and vegetables with high water requirement are grown. These crops need assured irrigation.

Eg - watermelon, cucumber.

<table>
<thead>
<tr>
<th>Basis</th>
<th>Rural Settlement</th>
<th>Urban Settlement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Resource Base</td>
<td>The main resource base is natural resources as they are engaged in primary activities of agriculture, livestock rearing, fishing etc.</td>
<td>The main resource base is the resources extracted by rural settlements which they utilize in manufacturing and service sector.</td>
</tr>
<tr>
<td>2) Economic Function</td>
<td>Rural settlements have basic economic function of producing food and raw materials for urban secondary and tertiary sectors.</td>
<td>Urban settlements are engaged in primary economic activities.</td>
</tr>
</tbody>
</table>
16. The main source of water for this plant is Tandula Tank.

17. Internet is the communication service which allows the movement of ideas, information and knowledge without actual movement of people or actual visits.

India is one of the five countries with highest Internet users in the world. Being a large country, Internet is of special significance as people can communicate with relatives and friends in distant parts with minimal time and cost.

Internet is a source of information and therefore people can access the Internet for gaining information. Also with Internet communication over international boundaries is as easy as within region.
Internet services like e-mail facilitate communication through single click of mouse. New facilities like video calling made communication more effective.

Facilities of e-commerce, e-governance, online filing of taxes and bills have reduced transportation expenditure and brought people in direct touch with government.

Internet embodied by World Wide Web (WWW) is now spread everywhere as global cyber space ranging from a shop to market, hence making personal communication easier. It is wider exposure of internet that idea of global village has become a reality.

Water pollution refers to addition of impurities in water which makes it unfit for consumption by humans. Water pollution involves addition of unwanted material which
right be suspended in water, get dissolved or deep down the aquifers to contaminate the ground water resources. Industries are main polluters because:

- As per observation of Central Pollution Control Board (CPCB) at 500 stations, organic and bacterial waste from industries continue to be the largest polluters of water resources in India.

- In 1997, there were 251 polluting industries located near rivers.

- River Yamuna at Delhi is the most polluted river of country due to industrial waste disposed by the Delhi and surrounding states.

- Pulp, chemical fertilizers, glass industries are the biggest polluting industries which cause greatest harm to the river waters.
- Industries dump their untreated waste containing nitrates, phosphates, suspended impurities, and toxic runoff into rivers, polluting the surface water and deep aquifers.
- Industries release hot untreated water into rivers, which raise the river's temperature, destroying the fish and other aquatic life.

The waste released by industries mostly consists of non-biodegradable nature and exceeds beyond the natural regenerative capacity of river ecosystems. This, metal, and other pollutants released by industries cause irreparable damage to water bodies.

The industrial region of Bihar and Kolkata is an increase in arsenic concentration in ground water due to waste released by industries and overdraining of ground water.
All the major rivers of India - Ganges, Yamuna, Cenam, Adyar. Kali, Gomti, Narmada - contain pure water in the upper areas and are extensively polluted near industry towns. Pollutants also keep down the soil and some pollute groundwater. When rivers meet sea, they pollute sea water as well.

191. The railway line shown on the map is the Trans-Canadian railway.

192. Terminal station along the Atlantic coast is Halifax.

193. This railway line is known as economic artery of Canada because...

7. It links the industrial region of Quebec - Montreal with forest and prairies, hence enabling raw materials source with production centre and making them complementary.
To each other.

A line from Winnipeg joins St. Lawrence Waterway at Thunderbay through which it joins North Atlantic Sea route and that connects to Rhine waterway in Europe. Hence cities in Canada are exposed to industrial base in Europe and hence boost up the trade.

20. Rainwater harvesting is collecting, storing rainwater and then recharging groundwater through various sources. The economic values related to rainwater harvesting is

1) Conservation of resources - Water is conserved by preserving each and every drop of water.
2) By doing this the gap between demand and supply is bridged.
3) Redundant expenditure: Expenditure is reduced on extraction of groundwater as groundwater level is raised by recharging groundwater level.

2) Sustainable growth: Rainwater harvesting promotes sustainable growth by:
   1) Improving water quality by diluting contaminants.
   2) Preventing salinization in coastal areas if used to recharge aquifers.
   3) Preventing flooding as the water is not let to flood but stored.
   4) Therefore rainwater harvesting increases water resource for future generation.

Social benefit:
- Self-reliance: Rainwater harvesting makes the community self-reliant in its water demand by providing options of saving water to be used in times of scarcity.
- Programme like Harpal practised at village level.
Human development is expansion in the choices of people. It is the process which empowers people to develop their capabilities and give them enough resources to develop their talents, and hence have large number of choices and freedom to choose any. It aims at providing meaningful life which is healthy, long and have goals to be fulfilled with people having resources to fulfill them.

Four pillars of human development are:

1. Equity: Equity refers to equal distribution of resources so that everybody has equal access to them and not discriminated on any basis like that of caste, sex, race,
religion etc. Equity refers to equal access of people to resources and benefits from development.

eg- when all children have equal access to education, facility unlike at present when in India the maximum number of school students are females and marginalised sections.

ii) Productivity: - Productivity refers to the output per unit of worker/person. It reflects the skills and expertise of people by which they can help in production of resources. Productivity is essential to increase output and hence increase income to avail life opportunities.

   Education and health facilities improve productivity.

   eg. - Productivity of Indian labor is lower than that of USA, hence the economic development and level of HDI of India is low than that of USA.

iii) Sustainability: - Sustainability is using the resources in such a way so as to fulfill the demands of the present...
generation without compromising the ability of
future generations to meet their demands. It
is the judicious use of resources.

eg. Due to low education imparted to females, they
are not able to lead an independent life full of
opportunities due to the deprivation of education by
the previous generation.

4) Overuse and pollution of water makes it unfit for
future generations.

iv. Empowerment: - Empowerment is increasing
the capabilities of the people through empowering
them by providing them agency, education or
empowerment means increasing the power and
hand of people to make wise decisions.

eg. By providing free education to females, they
are empowered in their economic and social status,
and they are able to make decisions out of courage.
3. Five patterns of rural settlements in the world on the basis of forms or shapes are:

1. Linear pattern – When settlement is developed in a linear form on the edge of rivers, along roads, or coastal boundaries. The linear pattern of the settlement developed as houses developed around these structures, e.g., along the highways in USA.

2. Circular pattern – When settlement develops around a lake or a pond forming a circular pattern. Sometimes, due to protective reasons, cities and farms are kept in centres and settlement takes place around them forming circular patterns, e.g., settlement around the Chilika Lake.

3. Rectangular pattern – These types of settlement patterns are found in plain areas or in intermediate valleys where there are wide...
open stretches of land. The roads surrounded the settlement near four sides and cut each other at 90°.

e.g. - settlement in Ganga plains.

iv) T-shaped, Y-shaped, cruciform pattern: - These types of settlement depend on how the roads, railway routes, merge and subsequent development of settlement around them.

i) T-shaped - when there is a trifurcation of roads and houses develop along them.

ii) Y-shaped - when two roads converge on a third one and houses are placed along them.

iii) X(cruciform) - when two roads intersect at each other and form a cross-like pattern.
1) Star shaped - When multiple roads converge at a point and houses are developed along them, a fan-like pattern of settlement develops.

2) Double Village - When houses develop on both sides of a water body like river and are connected by a ferry or a bridge, such as village develops. Eg: Village on two sides of Rangoon connected by a bridge.

3) Commercial livestock rearing is practiced in the more developed parts of the world where a single crop rotation takes place.

4) Breeds Commercial livestock are

5) Ranching - In commercial livestock rearing, animals are not allowed to open graze. The land is broken into small enclosed pieces.
1) Commercial in nature: Commercial livestock rearing is totally market oriented. Its chief products - meat, milk, meat products, wool etc. are processed and packaged scientifically and re-exported throughout the world.

2) Single animal: Under commercial livestock rearing a single animal is kept i.e. many large numbers of same animal is kept and special emphasis is laid on genetic improvement, scientific breeding, healthcare and selective breeding of animals, hence output is huge. Animals kept are hens, sheep, goat etc.
10. Labour and capital intensive - commercial livestock rearing is both capital and labour intensive as the feeding facility, feed storage, healthcare and facility increase the capital expenditure. This activity is labour intensive as it requires vigorous labour in feeding, cleaning and rearing items from animals.

11. Related to Western world - commercial livestock rearing is related to Western world values due to advanced facilities the production level is very high. The areas related to commercial livestock rearing are Argentina, USA, North Western Europe, Australia, New Zealand and Uruguay.
International trade can be categorized into bilateral and multilateral.  

Bilateral trade occurs between two countries. The agreement is usually made between two countries with similar economic conditions.  

Multilateral trade involves more than two countries. It can be intra-regional or inter-regional. The agreements are more complex and involve multiple countries.  

Intra-regional trade is within the same region, while inter-regional trade is between different regions.  

The benefits of multilateral trade include increased economic growth, reduced costs, and access to larger markets. However, the negotiations can be more difficult and time-consuming than bilateral agreements.  

Overall, multilateral trade offers more opportunities for economic growth compared to bilateral trade.
**Ports are gateway of International Trade**

- 95% of international trade by volume and 70% by value is carried through waterways.

**Ports are terminal stations of waterways and waterways being the most preferred transport system for international trade because:**

- They can carry huge amount of goods at cheap price.
- They do not need road construction as all oceans are interconnected.
- They are fuel efficient as force of water sustains the speed of the vessel.

**Ports can receive huge amount of cargoes from international trade and provide facilities for docking of ships, unloading and storage facility.**

**The provision of containers at the ports has facilitated storage, now for...**
And transport of goods

- The material produced in the hinterland of a port is brought to the port and from there transported to international locations.

- Ports have high-level of investment in creating authorities for development of these ports, maintenance, and smooth functioning so international transport can take place easily.

- Ports are provided with refrigeration facilities so ports of call like Honolulu or main ocean routes.

- Some ports have specialized features of having oil refineries, some are dedicated solely to iron ore export, hence provide facility for carrying out international trade in these commodities.
Importance of ports in trade can be gauged from the fact that they were the first places to be developed by colonizers and facilitated their expansion.

Kerala has the highest level of human development in the country with a score of 0.638. Emergence of Kerala on lead in HDI can be gauged from following facts:

- Literacy levels: Kerala has the highest literacy level in the entire country for both females and males. The literacy rate of males is 90.92% and for females is 87.85%. Also, the gap between male and female literacy rates is just 3%. Education infrastructure is well developed in state hence it gives it an edge over other states.
Equal distribution of resources — Total per capita income of Kerala is more than `4000 and hence it is one of the highest earning states in country. Also, the per capita consumption expenditure is more than `690, and it has a small number of people under poverty line. The economic development of the state can also be attributed to large remittances sent from Indians living in Gulf countries.

Health — Kerala has age-sex pyramid similar to that of a developed country, with broad base and narrow top. It is nearly bell shaped. This shows lesser deaths rate while crude death rate was 9.4% and lowest in country. Broader base signifies higher longevity hence better expenditure on health care facilities, maternal healthcare, nutritional intake. Kerala is the only state to have total fertility rate of 1 population growth equal to replacement level. It is the only state with equal male-female sex ratio.
Social cultural factors —

Kerala has more or less homogenous composition of population which implies that there is less diversity of population hence lower levels of social conflict leading to an improvement in the HDI ranking due to lack of cases of human rights violation.

Historical factors —

During British time, Kerala was not much affected by the exploitative policy of the Britishers rather it had an increased influx of Christian missionaries which is largely responsible for the higher literacy rate and equal male and female sex ratio. Also after independence, it was one of the few states where land reforms were properly implemented hence ensured higher rural productivity. Also, Kerala has high social and economic infrastructure. It has highest road density of 287.24 km1km² in the country.

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