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Subject and Paper code: Environmental Studies & code is 59397

Q.1. (A) : Reading of Thematic Map.

(2Mx5 = 10M)

1) Theme of map : Distribution of Population in the world

2) Pictogram

3) China & India

4) Population of Africa is $100 \times 10 = 1000$ millions while population of Europe is only 700 millions. So Africa is more populated than Europe.

5) Population of Australia is only 100 millions and is negligible because $\frac{3}{4}$ th of Australia is desert.

Q.1. (B) : Filling of World Map.

(1Mx10 = 10M)

1) Thar desert, Rajasthan

2) Brazil

3) North Atlantic Ocean

4) London

5) Tropic of Capricorn (In southern Hemisphere)

6) Nile river

7) Ring of fire – Area in Pacific Ocean near Japan

8) Any one country amongst –Chad, Niger, Congo, Zambia, Zimbabwe, Botswana, Mali, Kenya

9) To be shown in the map of Australia.

10) Mediterranean Sea

Q. 2 A) The influence of Biotic Components on Human Activities:

(10M)

Biotic components include 1) Natural vegetation, 2) Animals, 3) Microorganisms.

Natural vegetation provides us with variety of food crops and other forest resources like wood, timber, medicines, herbs, honey etc. Many occupations of human beings are associated with natural vegetation like Forestry, Fruit collection, lumbering, paper pulp industry, and match building.

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Autotrophs like trees provide us with energy which gets transferred through trophic levels from plants to animals- herbivores, carnivores, omnivores and decomposers.

Animals like goat, fish, crab, chicken and animal products like milk, eggs, flesh etc. are the sources of food for human being. Hunting, fishing and livestock rearing are still the primary occupations of several tropical countries.

Animals like horses, camels, donkeys', reindeers, dogs etc. are being used as beasts of burden in transport industry. Yaks and sheep yield wool while silk worms yield silk. Microorganisms provide antibiotics. Decomposers like fungi and bacteria break down the complex food from dead organisms into simpler forms which can be again reused.

Q. 2. B) Man's dynamic role as destructor and protector of environment: (10M)

There is a close interaction between man and his environment.

So whatever activity man does for his comfort and greed, puts pressure on environment.

Students are expected to describe the role of man as destructor of environment through his various activities like lumbering , wood cutting, deforestation, animal rearing, hunting, commercial fishing , industrialization, world rapid transport etc.

But there are certain alert environmentalists who are now working as the protectors of environment through making awareness campaigns of activities like Afforestation, Reforestation , impacts of Ozone layer depletion and global warming, causes of floods and droughts , population explosion etc. throughout the world.

Q.2. C) Characteristics and Types of Ecosystems: (10M)

1. Ecosystems' of any given part time unit represents the sum of all living organisms and physical environment.

2. It is a well defined area.

3. It is an open system characterized by continuous input and output of the energy.

4. It is mainly powered by solar energy.

5. It is functional unit.

6. There is a complex interaction between the biotic and a-biotic components.

7. Ecosystems are natural systems and well organized.

Types of Ecosystems: There are main two types of ecosystems.

1. Terrestrial and 2. Aquatic ecosystems.

Terrestrial ecosystems are further subdivided into

1. Tundra, 2. Desert, 3. Forest, 4. Grassland, 5. Wetland ecosystem

Aquatic Ecosystem is further subdivided into

1. Freshwater 2. Marine Ecosystem.

Q.3. A) Main causes of Deforestation in the world:

(10M)

1. Logging or cutting down trees.
2. Agriculture
3. Mining
4. Forest Fires
5. Construction of dams
6. Urbanization
7. Desertification of land

Students are expected to describe all the above mentioned causes with examples, if possible.

Q.3.B) Classification of Energy Resources according to their nature:

(10M)

There are basic two types of energy resources as per their nature.

1) Conventional 2) Non-conventional Energy Resources

Conventional or Non-renewable resources are further classified as

a) Coal b) Petroleum c) Natural gas d) Crude Oil e) Nuclear Power

Non-conventional Energy Resources (Renewable Resources) are subdivided as 1) Solar energy,

2) Wind Energy, 3) Tidal Energy, 4) Biomass Energy, 5) Geothermal Energy, 6) Fuel wood

Q.3. C) Methods of Conservation of water resources:

(10 M)

Water is a very precious thing . so there are various methods of water conservation at Household level, agriculture sector, Reduction of pollution and wastage of water,

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Management of water resources through (IWRM) ,recharging of ground water, Rain water harvesting, recycling,.

Students are expected to describe these points in detail.

Q.4. A) National Population Policy of India: Formulated in 2000 with 3 objectives like : (10M)

1) Long Term Objectives: Achieving a stable population by the year 2045, with the requirement of consistent sustainable economic growth, social development, and environmental protection.

2) Mid term objective: 1: To bring the Total Fertility Rate (TFR) to replacement levels by 2010. But the fact is that till 2018, this has not been achieved. TFR is the average no. of children each woman would have in her lifetime.

3) Immediate Objective: To address the unmet needs for contraception, health care infrastructure and to provide integrated service delivery for basic reproductive and child health care.

Q.4. B) Demographic Transition Theory: (06 M+ 04M= 10M)

Put forward first in 1929 by W.S Thompson and in 1945 it was fine tuned by F. W. Notestein. It refers to a sequence of changes over a period of time occurring as a result of complex relationship among birth rate, Death rate, & overall population change.

There are 4 stages of DTM. (06 M)

Stage I: High Stationary Stage: showing High Birth and High Death Rate, so Low growth rate.

Stage II: Early Expanding Stage: Rapid decline in the birth rate, continued high birth rate, so very high growth rate

Stage III: Late expanding stage: Rapid decline in the birth rate, continued decline in death rate, growth rate begins to decline

Stage IV: Low stationary stage – Low birth rate and low death rates- low growth rate

The students should draw the diagram also . (04M)

Q.4 C: Causes of population Explosion in India. (02M X5= 10M)

1) Early marriage of both boys and girls:

2) Advances in medical science since 1947

3) Illiteracy or low levels of education leading to ignorance about population

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4) Poverty and High fertility rate.

5) Social norms for male child, Family status, culture.

Students are expected to give the examples for each point from various states.

Q. 5. A) Definition of a Smart City:

(02M + 08M= 10M)

A smart city is a city that provides core infrastructure and gives a decent quality of life to its citizens along with a clean and sustainable environment.

(02M)

The project "Smart Cities Mission " aims to drive economic growth and improve the quality of life of people by enabling local area development and harnessing technology, especially that leads to smart outcomes.

There are 8 features of a Smart City.

(08M)

1. Effective mixed land use
2. Affordable Housing for all
3. Transport variety
4. Traffic reduction & creating walk able localities
5. Preserving and developing open spaces
6. Effective and cost effective Governance
7. Uniqueness to city by giving an identity
8. Applying Smart Solutions

Q.5 B) Mumbai is magnet of migrants. The Push -pull factors at Mumbai, as follows. (10M)

Mumbai is the most populated Metro city in India. Following Pull factors (attraction)

should be included for coming to Mumbai

1. Attraction of Bollywood, and entertainment
2. Good even climate
3. Safe environment for majority of all
4. Good Education Facility

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5. Ample employment opportunities of various categories in various fields

6. Better living conditions

Similarly there are all other adverse factors known as Push factors at the place of origin in other parts of India, which are as follows.

1. Maybe Harsh Climate
2. Unemployment
3. No entertainment
4. No safe environment
5. No good education

Q5. C) Effect of Migration on the Urban Environment:

(10M)

The Urban area where the people migrate has the following effects.

1. Population increase
2. More dominance of younger energetic people
3. Less females
4. More literate
5. More male labors
6. More Income- high productivity
7. More heterogeneous population
8. Area gets more developed
9. Crowding, congestion, pollution
10. Uncomfortable housing
11. More communicable diseases