

PART II : SECTION I

Ans 5.a) A) Population Explosion :-

Population Explosion refers to an exponential growth of population which exceeds beyond expectations in a very short span of time.

B) Causes of Population Explosion :-

i) Lack of family planning =

The people of Pakistan are not aware of family planning and therefore it has led to an exponential increase in the population.

ii) Lacking use of contraceptives =

The people of Pakistan more often than not, do not use contraceptive when engaging in sexual intercourse which leads to the population explosion.

iii) High fertility rate =

Pakistan is a country where the women, biologically, have a very high fertility rate which leads to them conceiving children or becoming pregnant easily. Leading to an increase in population.

iv) Long life expectancy =

The life expectancy in Pakistan due to sfo

of the all medical facilities at PIMS, CMH and many other hospitals has led to an increase in life expectancy of the people causing a surge in the population. The average life expectancy of people from Pakistan has now passed 65 years according to WHO.

v) High testosterone level in males =

The males of Pakistan possess high levels of testosterone on average. This leads to more effective sperm production and on average the Pakistani men can get a woman pregnant more easily. This leads to an increase in population.

vi) Sexual Education is considered a taboo =

Sexual Education is still considered a taboo in Pakistan. This leads to less awareness among couples about sex which leads to them conceiving children and resultantly, an increase in population.

c) Control Measures:-

i) Awareness among the masses =

There is a dire need of spreading awareness among the masses about the usage of contraception and encouraging the practice of family planning.

ii) Encouraging use of contraceptives

The usage of contraceptives will decrease chances of pregnancy and in turn, lead to a decrease in population increase.

iii) Two-child policy

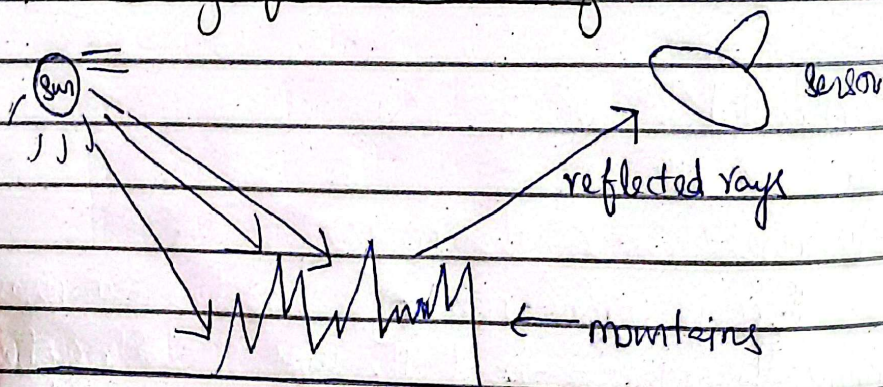
Policy interventions by the state such as China's two child policy could be a method opted for the control of population explosion.



Ans 5.b) A) REMOTE SENSING

Remote sensing is a proximal method utilised to identify, gather and predict the information regarding a geographic location. It uses satellites in its working and can accurately identify a location from far away.

i) Working of Remote Sensing :-



Remote sensing, uses the reflected rays from a surface to figure out the geographical features of a surface. The sensor receives the reflected rays from the surface, analyses it and uses it to predict the type of and location of the surface.

ii) Types of Remote Sensing:-

i) Natural Powered =

Natural powered remote sensing uses a natural source of energy like the sun and receives its reflected rays.

ii) Self Powered =

The self powered remote sensing uses a source placed by the humans themselves to generate the energy which is propagated towards surface and then used to figure out the features of the surface.

iii) Components of Remote Sensing:-

i) Sensor

ii) Technical Human resource

iii) Surface whose identification and information is required

B) GIS

GIS refers to Geographical Information System, which is a software that identifies, analyses, predicts and stores information about a geographical region.

Role of GIS in Environmental Sciences-

i) Helps in Disaster management =

GIS helps predict disaster ridden areas and which areas are in need of relief activities. It can help in flood relief activities.

ii) Urban Planning =

GIS can be used to effectively plan and manage the urbanization process. It can be used to mitigate the damages caused by the urbanization to the environment.

iii) Prevention and Mitigation of Floods =

GIS can be used as a form of early warning system which can help in the prevention and mitigation of floods and many other disasters.

iv) Access to remote areas =

GIS can be used to access and

help out people in remote or inaccessible areas. It can help in maintenance of equitable resource distribution to them and ensure equity.

v) Identification of lands where reforestation or afforestation can be done =

GIS can be utilised to identify areas with rich ecological systems and biomes and reforestation efforts can be done there to prevent the disruption of ecological system and prevent loss of biodiversity.

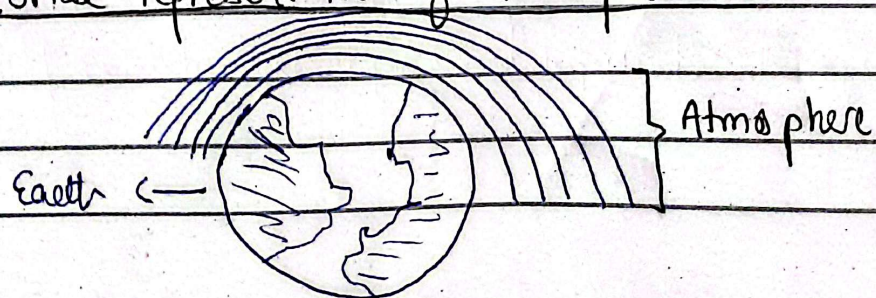


Ans. c) ATMOSPHERE

The atmosphere is the blanket of the Earth. It covers the Earth completely from all the sides. It consists of multiple gases, mainly :-

- i) Nitrogen (78%)
- ii) Oxygen (21%)
- iii) Carbon dioxide (0.4%)

A) Pictorial representation of Atmosphere :-



B) Layers of the Atmosphere :-

- i) Troposphere
- ii) Stratosphere
- iii) Mesosphere
- iv) Thermosphere
- v) Exosphere

C) ATMOSPHERE : BLANKET of the EARTH :-

The atmosphere is called the blanket of Earth because it helps trap the heat of the sun which in turn does not let our planet become very cold. Furthermore, it protects the Earth from harmful rays of the sun and helps maintain a balance of the temperature on the Earth.

GSA - Mock

Q6) a) Apple : Berry : Cherry : Date
3 : 6 : 20 : 5

Apple exceed^{Date} Candies by 35.

Difference in ratio = 2

→ 2 ratios represent = 35.

so 1 ratio = 17.5

$$\begin{array}{r} 43 \\ 17.5 \\ \times 6 \\ \hline 105.0 \end{array}$$

Berry candies = 6 ratios.

Berry candies = $6 \times 17.5 = 105$.

6.5) Camera price = \$200

Discount = 25%

Tax = 6%

Total amount paid = Price - (discount) + Tax on price

$$\text{Discount} = \frac{25}{100} \times 200 = \$50$$

$$\text{Tax} = \frac{6}{100} \times 200 = \$12$$

$$\text{Total amount paid} = 200 - 50 + 12 = \$162$$

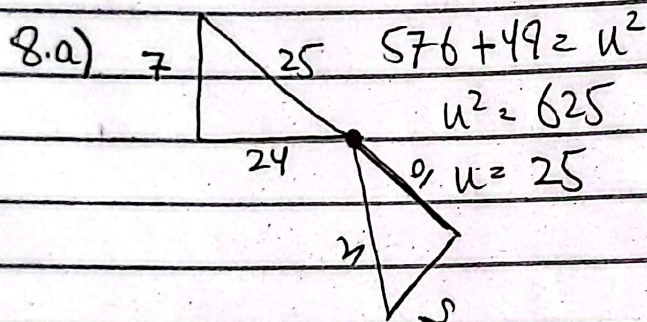
6c) Distance = 36 km
 Speed = 18 km/h
 Start = 1 pm.

$$\text{Time taken} = \frac{36}{18} = 2 \text{ hours.}$$

Time when it reaches = 3 pm.

6d) i) STATISTICS

ii)



$$\begin{array}{r} 124 \\ \times 24 \\ \hline 496 \\ 1526 \\ \hline 625 \end{array}$$

$$u^2 = 5^2 + 10^2$$

$$u^2 = 25 + 100$$

$$u^2 = 125$$

$$u^2 = 125$$

$$u = \sqrt{125} = 11.1 \text{ km.}$$

$$\text{Total distance} = 7 + 24 + 25 + 10 + 5 + 11.1 = 82.1 \text{ km}$$

$$\text{Distance from start} = 11.1 \text{ km.}$$

$$8.6) \text{ Total} = \text{Rs } 9000$$

$$A = \frac{1}{2}B, B = 3C, C = 4D, D = 2E, E = F$$

$$E = F$$

$$D = 2F$$

$$C = 4(2F) = 8F$$

$$B = 3(8F) = 24F$$

$$A = 12F$$

$$F + 2F + 8F + 24F + 12F = 9000$$

$$47F = 9000$$

$$F = \frac{9000}{47}$$

$$47$$

$$F = 191.5$$

$$A = 2298 \text{ Rs}$$

$$B = \text{Rs } 4596$$

$$C = \text{Rs } 1532$$

$$D = 383 \text{ Rs}$$

$$E = \text{Rs } 191.5$$

$$\begin{array}{r} 647 \\ \times 9 \\ \hline 423 \end{array}$$

$$347$$

$$191.5$$

$$\begin{array}{r} 47 \overline{) 9000} \\ 476 \\ \hline 430 \\ 423 \\ \hline \end{array}$$

$$\begin{array}{r} 191.5 \\ \times 12 \\ \hline 3830 \\ 1915 \\ \hline 2298.0 \end{array}$$

$$2298.0$$

$$311$$

$$191.5$$

$$224$$

$$7660$$

$$3830 \times$$

$$4596.0$$

$$15320$$

$$191.5$$

$$2$$

$$3830$$

8.c) TSA = Sum of Area of all faces.

$$= [2(6 \times 4) + 2(8 \times 6) + 2(4 \times 8)]$$

$$= [2(24) + 2(48) + 2(32)]$$

$$= 2[48 + 96 + 64] = 208m^2$$

$$\begin{array}{r} 148 \\ + 96 \\ \hline 64 \\ \hline 208 \end{array}$$

Volume = $l \times b \times h$

$$8 \times 6 \times 4 = 192m^3$$

$$\begin{array}{r} 324 \\ \times 8 \\ \hline 192 \end{array}$$

8.d) Family = 8 members.

Men = 72 kg of food.

Women = 50 kg of food

Men & Women are equal in number = 4

Anna joined and new average = 67

$$\text{Men ate} = 72 \times 4 = 288 \text{ kg}$$

$$\text{Women ate} = 200 \text{ kg.}$$

$$\begin{array}{r} 72 \\ \times 4 \\ \hline 288 \end{array}$$

$$\begin{array}{r} 467 \\ \times 2 \\ \hline 934 \end{array}$$

$$\text{New avg} = 288 + 200 + \cancel{102} \times 9 = 67$$

$$\begin{array}{r} 667 \\ \times 9 \\ \hline 6003 \end{array}$$

$$288 + 200 + 102 = 67 \times 9$$

$$\cancel{102} \times 9 = 918$$

$$u = 603 - 288 - 200$$
$$u = 115 \text{ kg.}$$

$$\begin{array}{r} 603 \\ - 488 \\ \hline 115 \end{array}$$

Amna ate 115 kgs.