

Section-1

Question No 5

(a)

Pakistan is fifth most populous country of the world with population of approximately 250 million people. Pakistan is considered to have highest birth rate in South Asia with every woman giving birth to 3.6 lives. These numbers are quite alarming for an under developed country, have less resources and fragile economy. After vigorous examination it came to observation that there are some causes behind population explosion in Pakistan. Following causes merit attention :-

a) Lack of Family Planning :-

Families in Pakistan are lacking information regarding the procedure of family planning and its advantages. Majority of population specially of rural areas is completely unaware about any such mechanism.

b) Expensive Birth control Pills :-

Birth control pills that are available in medical stores are expensive. Majority of the population in Pakistan lives below the poverty line who have difficulty in earning daily bread and butter, and afford to buy any medicine.

(c) Misinformation regarding Birth Control:

There are many myths and misinformation spreaded even in cities that birth control medicine has side effects on health of women.

(d) Religious believes

Some religious clerics also discourage this whole birth control mechanism and make people consider this a major sin.

(e) Mass Illiteracy

Pakistan has largest illiteracy rate in South Asia due to which people are unaware about the advantages of family planning and effects of avoiding it.

(f) Governance failure

Government has never given this problem a priority. There have never been any institutions or seminars in villages / backward areas to teach the people the same.

Control Measures

(a) Family Planning Centres in cities and remote areas

Family Planning centres must not be limited to big cities only rather Govt should introduce free family planning centres in remote areas to teach people.

(b) Easy access to Birth Control medicine.

Birth Control medicine or Condoms should have less price in order to make it easily accessible to poor population.

Sexual Education :-

Government should include sexual education in education curriculum to teach the adolescence specially the girls regarding family planning -

Stopping / Countering misinformation :-

Government should take the renowned religious personalities onboard in order to end all the misbeliefs and wrong information regarding Population Control -

(b) Remote sensing? Role of GIS in environmental science

Remote Sensing

Remote Sensing is the procedure used by the scientists to monitor different locality of earth without physical contact -

Images of satellites, videos of drones and similar procedures are adopted by the scientists to monitor the changes undergoing on earth -
for example, scientists can monitor the glacial melting in Antarctica or deforestation in Amazon

b) Comparing the satellite data from time to time -

Role of GIS in environmental Science:

Geographical Information System is the procedure used by the scientists to monitor the environmental changes and happening - following uses of GIS merit consideration:-

- a) Monitoring weather changes and Predicting the weather like droughts by monitoring the movement of wind and cloud.
- b) Monitoring desertification of any land.
- c) Deforestation can be calculated with the help of GIS.
- d) GIS helps in finding the places that got hit during natural disasters like floods.
- e) GIS can help in pointing out the changes in all environment e.g. river flow, rising sea levels and urbanization -

(C) Atmosphere is blanket of Earth

Earth is the miraclous planet on which the life exists and have all things necessary for survival of species on it - However, it has been noted that Atmosphere of the earth protects it from all the threats and is called blanket of

a) Perfect balance of gases in Atmosphere

Atmosphere of earth is only known atmosphere which contain all the gases in their perfect balance for survival of living things on earth - for example 21% oxygen.

b) Ozone layer for Protection of Earth

Ozone layer around the earth protects it from harmful rays coming from sun - otherwise these rays can cause deadliest diseases like skin cancer.

c) Electromagnetic wave covering the Earth

Around the ~~earth~~ earth, there is a electromagnetic wave that protects it ~~from~~ not only from ~~other~~ harmful radiations but also ~~but~~ by preventing small meteoroids reaching earth.

d) Presence of large Planet (Jupiter) behind earth

Jupiter that is right behind the earth has high gravitational force that pulls all the large asteroids reaching that ~~that~~ can cause huge damage to the planet if collide with it.

e) Perfect weather and Water cycle

Atmosphere provides perfect weather conditions to the living species along with the water cycle which is necessary for existence of all species including human beings. Without this balanced weather and water cycle, ~~ex~~ earth can become a planet with any living being.

(d) Define the following terms:

i) Hydrometer

An instrument to measure the density of liquids - It can explain how heavy or light a liquid is.

ii) Epicenter

The point on the earth's surface directly above the focus of an earth quake, where earthquake felt strongly.

iii) Eye wall of cyclone

Eye wall of cyclone is circular wall of clouds surrounding the center of a cyclone - contains most violent winds.

iv) Deep focus

It is form of earth quake that originates very deep inside earth quake i.e 300 kilometers.

v) light year

A unit of distance used in astronomy.

It is distance the light travel in one year i.e 9.46 trillion kilometers.

Section-11

QNO6

(b)

Price of Camera = 200 \$

Discount = 25%

Tax = 6%

lets find the final Price after 25% discount

$$= \frac{200}{100} \times 25$$

$$25\% = 50$$

Now Subtract the 25% discount through original amount

$$= 200 - 50 = 150$$

Discounted Price = 150

Addition of 6% tax

$$6\% \text{ of } 150 = \frac{150}{100} \times 6 = 9$$

Adding the 6% tax in discounted price

$$= 150 + 9$$

Total amount Paid = 159 \$ Dollars

(c)

Speed of bicycle = 18 km/hr

distance to cover = 36 km

Starting time = 1pm

$$\text{Time} = \frac{\text{Distance}}{\text{Speed}} \Rightarrow \text{Time} = \frac{36}{18} = 2 \text{ hours}$$

So if starting time is 1pm it will reach destination at 3PM

(d)

i) Statistics

ii) Algebra

Question No 7

(a)

Diameter = 14 cm

Radius is half of diameter = 7 cm

$$V = \frac{4}{3} \pi r^3$$

$$V = \frac{22}{7} \times (7)^3 \times \frac{4}{3}$$

$$V = \frac{4}{3} \times \frac{22}{7} \times 49 \times 7$$

$$V = \frac{4}{3} \times 154$$

$$V = 4 \times 51.33$$

$$V =$$

$$\begin{array}{r} \text{RW} \\ 51.33 \\ 3 \overline{) 154} \\ \underline{15} \\ 4 \\ \underline{3} \\ 10 \\ \underline{9} \\ 11 \end{array}$$

(a) Diameter = 14 cm

Radius = 7 cm

$$V = \frac{4}{3} \pi r^3$$

$$= \frac{4}{3} \times \frac{22}{7} \times (7)^3$$

$$= \frac{4}{3} \times \frac{22}{7} \times 343$$

$$= \frac{4}{3} \times 1078$$

$$\text{Volume} = 1437.33 \text{ cm}^3 \text{ Answer}$$

(b) Total amount = 25000

Ratio = 1:2:3:4:5

Addition of ratio = $1+2+3+4+5 = 15$

One Part = $\frac{25000}{15} = \frac{5000}{3}$

Smallest part = 1666.67

(c) (i) 2, 6, 18, 54, 162, 486

$2 \times 3 = 6$

$6 \times 3 = 18$

$18 \times 3 = 54$

$54 \times 3 = 162$

$162 \times 3 = 486$

$486 \times 3 = 1458$

No error in the series

(ii) 3, 5, 7, 11, 13

All the number are only divisible by 1 and themselves

So it is a series of Prime numbers

Next number = 17

(d)

Sides of triangle = 5cm, 12cm, 13cm

Pythagorean theorem

$5^2 + 12^2 = 25 + 144 = 169 = 13^2$

Angle will be

90°

Answer

