Dos and Don'ts for the General Science & Ability Paper

Hi there — you've prepared well! Remember, knowing the content is one thing, but presenting it in the paper exactly as required is another. Here are a few key points to keep in mind:

1. For a 5-mark part, aim to write at least 2 and at most 3 sides of the answer sheet. Often, a question has two or three parts, and the marks are divided accordingly — so address each part fairly.
2. Manage your time wisely — you have about 35 minutes per full question, which comes down to around 8 minutes for each 5-mark part. Stick to this to avoid rushing later.
3. Make your answers look scientific, not just theoretical. Use flowcharts and diagrams wherever they add clarity.
4. Neatness matters — keep your handwriting clean, avoid cutting or overwriting.
5. Mind your spelling and grammar — while GSA doesn't deduct marks for these, your expression leaves an impression.
6. In the ability portion, explain analytical ability questions in words. For a 5-mark part, show all steps and provide clear explanations.

Name: Fayyaz ul Rehman Faruqi
Batch: 212 Rehmanabad (Rawalpindi)

Part II

Section I

Question No. 1

Part A

Data is new oil

[illegible] controlling data is influencing the perception of people. It helps in timely execution of decision - increased pre[illegible]

Examples

① Pak-India Conflict
Pakistan responded with pre[illegible] due to information [illegible] suffered huge loss in the conflict.

② US restricted access to Journalists
The US has imposed restriction on the journalists. The restriction is aimed at protection of military and defense sites.

③ US Gaza peace Plan and Manufactured Empathy
Due to [illegible] access to the data the plan is shown as peace

while Israel achieve its goal. This manifests how data flows and how media shapes perception.

- Indo-Pak Conflict
- US restriction on Journalists
- Gaza peace plan

Conclusion.

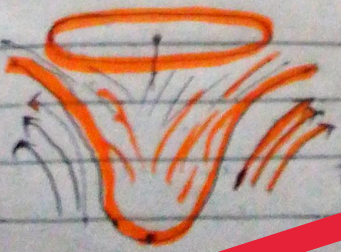
Data is new oil that's why states compete in the digital realm to control its flow so people back their policies.

Part b

Expansion of Universe

It is true. The evidence of universe expansion is red shift rays. It shows that universe is expanding like balloon.

Diagram



Rapid expansion of Universe

Resemblance with balloon

The expansion resembles balloon because the the centre of gravity pulls it back. However, the greater wavelength of red shift pushes it away.

Part C

Balanced diet

Balanced diet refers to intake of required and standard quantities of vitamins and minerals - micro and macro - nutrients.

Macro Nutrients

1. Carbohydrates
2. Proteins
3. Lipids
4. water

Micro Nutrients

1. Fat-soluble vitamins.
   - Vitamin A, D, E, K
2. Water soluble vitamins
   - Vitamin B complex
   - Vitamin C

Deficiency of Vitamin A, E, D

① Deficiency of Vitamin A:

① Night vision issues
② Color blindness

② Deficiency of Vitamin E:

① skin rashes;
② Hair fall

③ Deficiency of vitamin D:

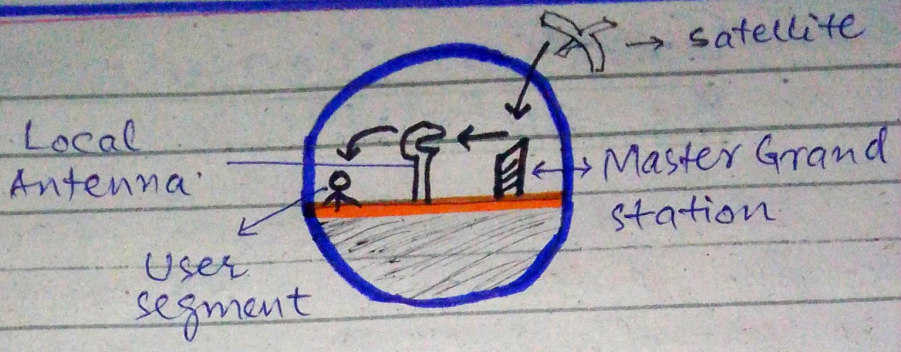
① In Child: Rickets
② In Adults: ste[illegible]nitis

Part D

Working of GPS

Global positioning system works on the basis of orbital satellite.

① Satellite transmits signal
② Antennas receives signals
③ Master Grand station on earth & monitor and maintain its function.
④ User receives these signals from locally stationed antennas

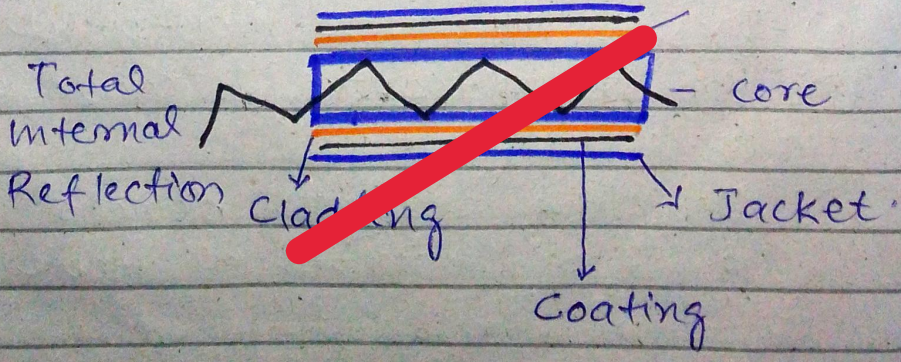


FIBER OPTICS

Fiber optics is a medium of light through which data flow in the form of light using the principle of Total Internal Reflection.

Components of Fiber Optics

1. Core
2. Cladding
3. Coating
4. Jacket



Location Measurement By satellite

2D and 3D images are carried to the Antennas in the form of signals. Satellite ...y captures the images and ...ers can distinguish ...ly between 2D and 3D images; however, the sensors can give the clue about the macro-patterns of earth.

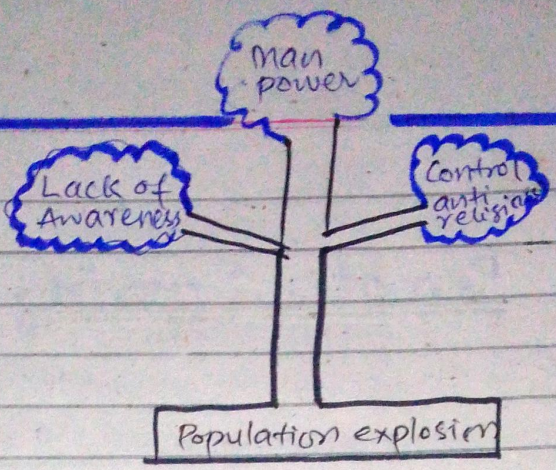
Question No 2

Population Explosion

Population explosion is a term used to represent a situation where the average growth rate exceeds the available resources.

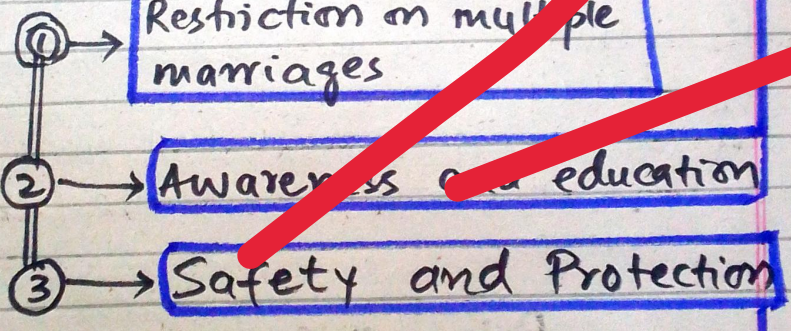
Causes:

1. Lack of Awareness
2. Desire to raise man-power
3. Population-control is considered anti-religious
4. Depleting resources depicts growing number of people



Measures to Control Population

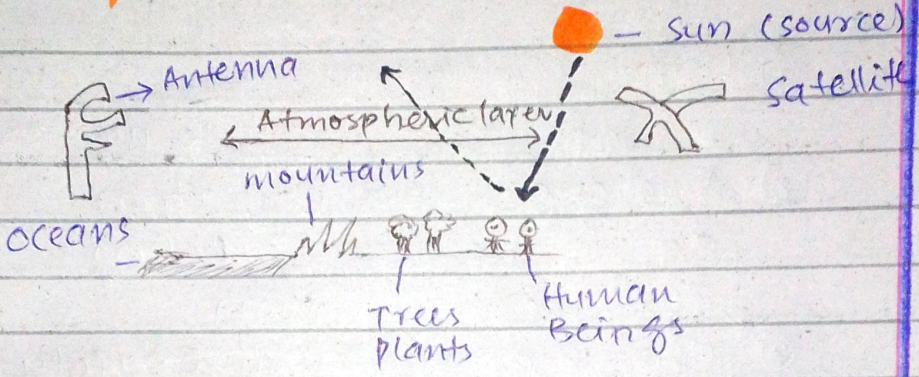
① Using Malthusian theory, restriction on multiple marriages.
② Awareness and education about resource depletion and over-population
③ Using protection and safety measures in several conditions



Part B

Remote Sensing

Remote sensing is process of identification of the geographic locations using sensors.



Components

1. Sun (Source of illumination)
2. Satellite (active and passive sensors)
3. Radiation to target
4. Monitoring of reflected rays
5. Interpretation and analysis
6. Images

Role of GIS in Environmental Sciences

1. **Identification of Geography**
   GIS is used to identify

geographic location during hazards.
- Pre-Destruction and
- Post-destruction

Town Planning and Urban City

GIS is used in town planning and urban city management.

Used for Inaccessible Areas Identification

GIS is used to identify those location which are inaccessible or costly to be accessed. Forest and wildfire are best examples.

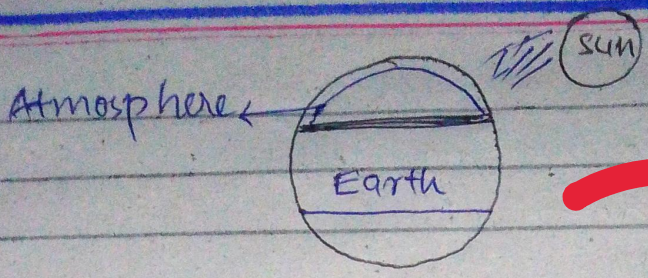
3

Part C

Atmosphere is blanket of the Earth

Atmosphere is blacket or protection coven of earth because it protects the life on earth from the harmful impacts of Sun.

1. Protection against UV
2. Support life on earth
3. Maintain balance between heat and cold



2

① Filter sun rays
② Trap harmful gases.

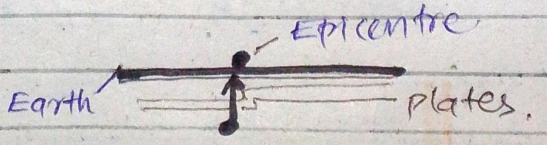
Part D

Hydrometer

An instrument used to measure the level of water.

Epicenter

A point on earth surface that arises from earthquake above the deep focus point.



Eye wall of Cyclone

Eye wall of cyclone is a point from where the cyclone emerge and spread due to rotating winds.

Deep Focus

The point from where the seismic energy is release and sometimes shake the earth, causing earthquake.

Light Year

Light year is Astronomical unit of length. Its value is 9 6.8992 $\times 10^{30}$. It is used to measure destance between galaxies and other heavy bodies.

Question No. 6

Given.

Part d:

① STSTAICTS = STATISTICS

② LGEBMAR = GAMBLER

Part B

Given

Sale price = $200

Discount = 25%

Tax = 6%

Cost Price = ?

Formula

$$sp = cp\left(\frac{100 - discount}{100}\right)$$

$$200 = cp\left(\frac{75}{100}\right)$$

$$\frac{200 \times 100}{75} = cp$$

$$cp = 266.66 \approx 267$$

Addition of tax

6% tax $\Rightarrow \frac{6}{100} \Rightarrow 0.0$

$\Rightarrow 266.6 \Rightarrow$ Total cost.

Part C:

Given

Distance = 36 km
Speed = 18 km/h
Time = ?

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}}$$

$$\text{Time} = \frac{\text{Distance}}{\text{Speed}}$$

$$\Rightarrow \frac{36}{18} = 2$$

At 1 pm started so → will reach on 3 pm

Part A

Apple, Berry, cherry, Dates.
3 : 6 : 2 : 5

$$\text{Sum of all ratio} = \frac{\text{Total}}{\text{No. of ratio}} \times \text{share}$$

$$16 = \frac{35}{4} \times \text{Apple}$$

$$\frac{16 \times 4}{35} = \text{Apple} \Rightarrow \frac{64}{35} = 1.828$$

Apple ⇒ 1.828 × 3 ⇒ 5.48
Berry ⇒ 1.828 × 6 ⇒ 10.97 ≈ 11
Cherry ⇒ 1.828 × 2 ⇒ 3.65
Dates ⇒ 1.828 × 5 ⇒ 9.14

Question No. 7

Part C

(ii) 3, 5, 7, 11, 13, 17

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

↳ Will Fit because each preceding number is multiplied by 3

$2 \times 3 = 6$; $6 \times 3 = 18$

$18 \times 3 = 54$; $54 \times 3 = 162$

$162 \times 3 = 486$

Part B

Total saving = 25000

Ratio = 1 : 2 : 3 : 4 : 5

Smallest ratio = ?

Sum of all ratios = 15

No. of all ratio = 5

$$\text{Sum of all ratio} = \frac{\text{Total amount}}{\text{No. of ratios}} \times \text{share}$$

① $= 15 \times 5 = \frac{25000}{15} \times 1 = 333.33$

$= 75000$

② $= 15 \times 5 \quad 25000 \times 2 \Rightarrow 666.66$

③ $= 333.33 \times 3 = \approx 1000$

④ $333.33 \times 4 = 1333.32$

5 $\Rightarrow 333.33 \times 5 = 1666.65$

Ratio 1 is 333.33 which is smallest