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 clear, 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.

Here's a brief key/sample of your Ability questions

Q.6

a) Candy ratio problem

Given: Packets in flavors Apple : Berry : Cherry : Date = 6 : 2 : 5

Asked: If Apple candies exceed Date candies by 35, how many Berry candies are there?

Note (consistency check): The ratio shows Apple = 3 parts and Date = 5 parts, so Date is larger than Apple in the ratio. The statement "Apple candies exceed Date candies by 35" contradicts the ratio (Apple cannot exceed Date if ratio is 3:5). Two ways to handle this:

1. If the problem truly intends Apple − Date = 35, that's impossible with the given ratio (would require negative common factor).

2. Most likely the intended meaning is Date exceeds Apple by 35 (i.e., Apple is 35 less than Date). We'll solve that reasonable interpretation.

Formula: Let common factor = k. Apple = 3k, Date = 5k

So 5k − 3k = 35 → 2k = 35.

Solution: 2k = 35 → k = 35 ÷ 2 = 17.5.

Berry = 6k = 6 × 17.5 = 105.

Answer: 105 Berry candies.

(If you intended the other wording exactly as written, note that it is inconsistent with the ratio.)

b) Camera discount + tax

Given: Original price = $200. Discount = 25% off. After discount, 6% tax applied.

Asked: Total amount paid.

Formula / Steps:

Discount amount = 25% of 200 = 0.25 × 200.

Sale price = 200 − discount.

Tax = 6% of sale price.

Total = sale price + tax.

Solution (digit by digit):

Discount = 200 × 0.25 = 50.

Sale price = 200 − 50 = 150.

Tax = 150 × 0.06 = 9.

Total paid = 150 + 9 = 159.

Answer: $159.00

c) Bicycle travel time

Given: Distance = 36 km, speed = 18 km/hr, start time = 1:00 PM.

Asked: Arrival time.

Formula: Time = Distance ÷ Speed.

Solution: Time = 36 ÷ 18 = 2 hours. Start 1:00 PM + 2 hours = 3:00 PM.

Answer: 3:00 PM

d) Unscramble math terms

i. STATISTICS

ii. GAMBLER

Q7.

Given:

- Diameter (d) = 14 cm
- Radius (r) = d/2 = 14/2 = 7 cm
- π = 22/7

Asked: volume of sphere

Formula:

Volume = $(4/3)\pi r^3$

Now, let's plug in the values:

Volume = $(4/3) \times (22/7) \times (7)^3$

$= (4/3) \times 22 \times 7 \times 7$

$= 1437.33\ cm^3$

Answer:

The volume of the sphere is approximately $1437.33\ cm^3$

ZEENAT

(b) Five friends' savings (total Rs. 25,000; ratio 1:2:3:4:5)

Given: Total = Rs. 25,000. Ratio = 1 : 2 : 3 : 4 : 5.

Asked: Smallest share (the "1" part).

Formula: Sum of ratio parts = 1+2+3+4+5 = 15. Smallest = (1/15) × total

Date: _____

Part - II

Section - I

25

Q#04

(b)

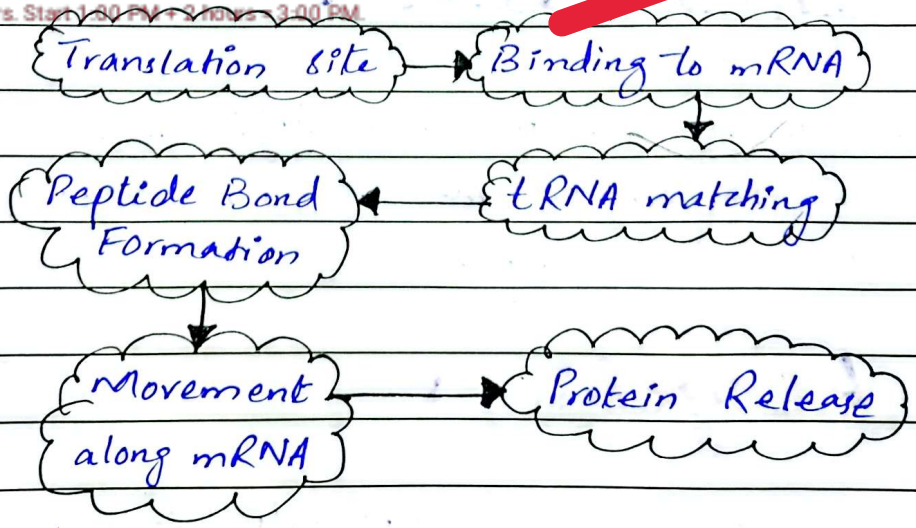
Ribosomes are essential for decoding genetic instructions and assembling proteins which are vital for cellular structure, function, and regulation.

They exist in two forms:

→ Free ribosomes

→ Bound ribosomes

The role of ribosome in protein synthesis



Date: _____

(C)

There are six methods of solid waste management.

1- Landfilling
2- Incineration
3- Recycling
4- Composting
5- Pyrolysis
6- Gasification

Landfilling:

Disposal of waste by burying it in designated grounds often with environmental safegaurds.

Incineration:

Burning of waste at high temp. to reduce volume and sometimes generate energy.

Recycling:

Processing used materials into new

Date: _____

products to conserve resources and reduce waste.

Composting:

Biological decomposition of organic waste into nutrient-rich soil conditioner.

Pyrolysis:

In absence of oxygen organic matter decomposes at high temperature to produce bio-oil, bio-char, and syngas.

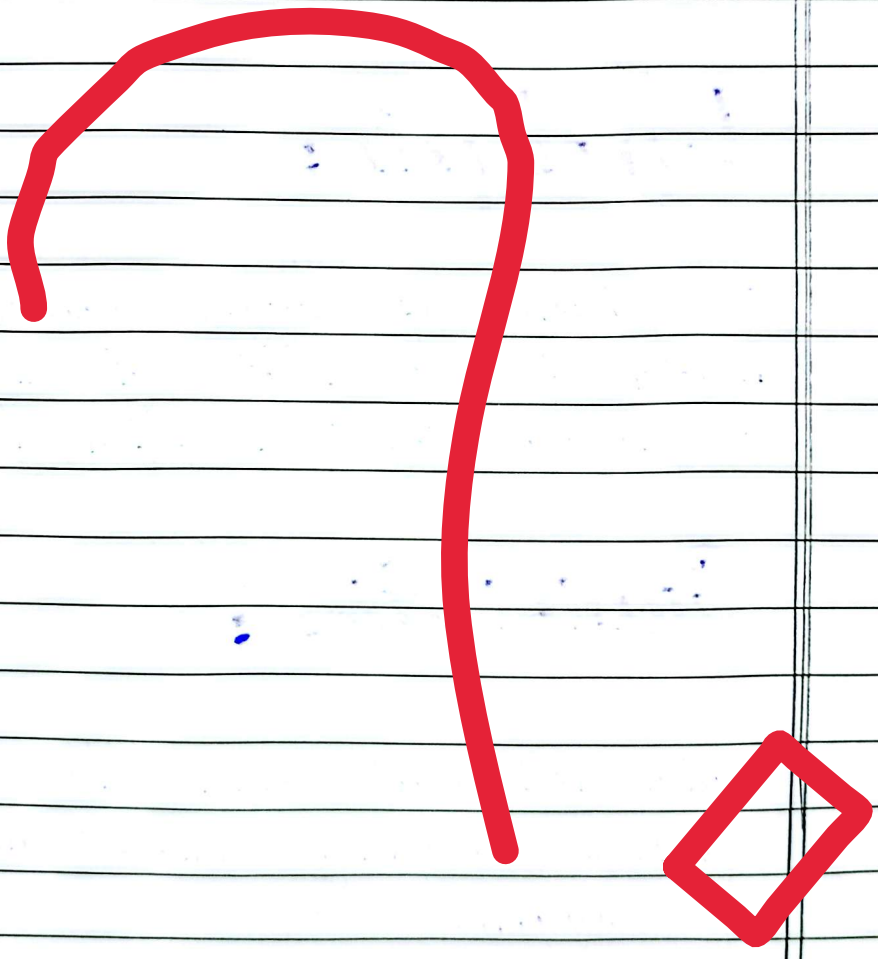
Gasification:

Carbon-rich waste converts into synthetic gas using controlled amount of oxygen.

Date: _____

(a)

Cholorophyll



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Date: _____

(d)

Biofuel:

The liquid fuel produced from organic matter such as plants, algae or agricultural waste.
Ex. Ethanol

Adulteration:

It is the process to add unnecessary content to product more profit in order to enhance profit.

Hydrosphere:

It refers to the region of earth where water is present including oceans, lakes, rivers etc. It covers 71% of the earth.

Troposphere

It is lowest layer of earth's atmosphere extending upto 12 km above earth's surface.

Date: _____

Isotopes:

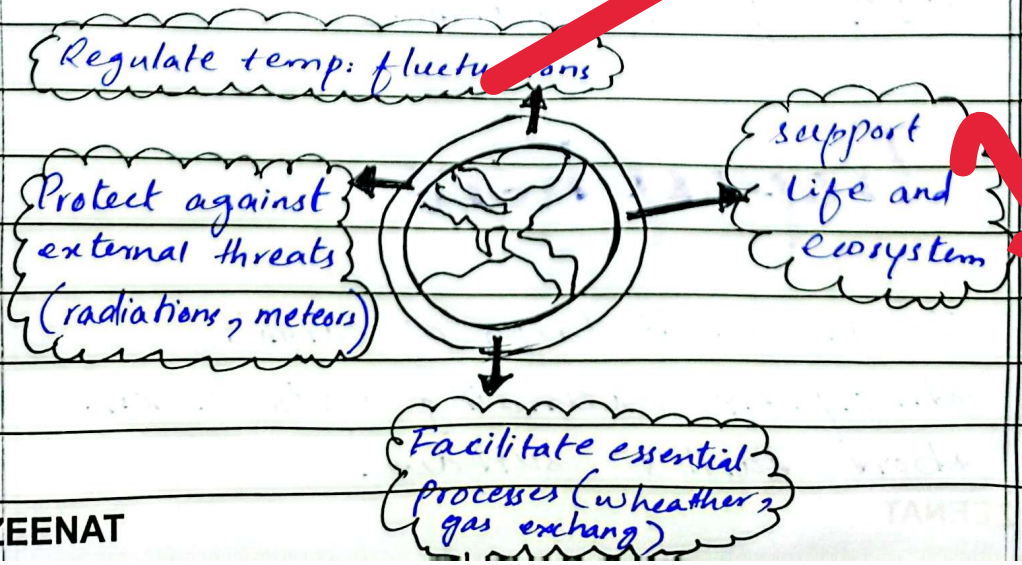
Atoms having same number of protons but different number of neutrons.

Example: ^{12}C , ^{13}C / ^{16}O , ^{18}O

Q#05

(C)

Yes, the atmosphere is the blanket of earth because its functions as protective blanket, enveloping and sustaining the earth, making it an apt analogy. Atmosphere's role as a blanket of earth is evident in its ability to do the following:



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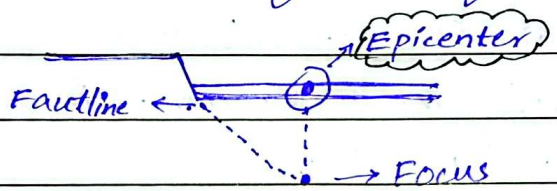
(d)

Hydrometer:

It is instrument to measure specific gravity and density of liquid.

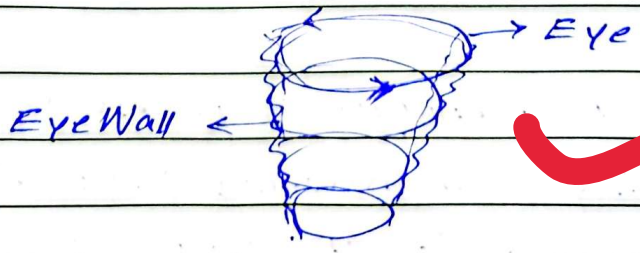
Epicenter:

Point on earth's surface directly above the focus of earthquake.



Eye wall of Cyclone:

Ring of severe thunderstorm surrounding the calm "eye" & contains storm's strongest winds & heaviest rainfall. It is the most dangerous part of cyclone



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Deep Focus :

It is a technique in which everything within the frame (foreground, mid-ground, and background) is in sharp focus simultaneously.
Ex. Orson Welles

Light Year :

Light year is the distance light travels in a vacuum in one terrestrial year.
Value : 5.88 trillion miles.
It is unit of distance.

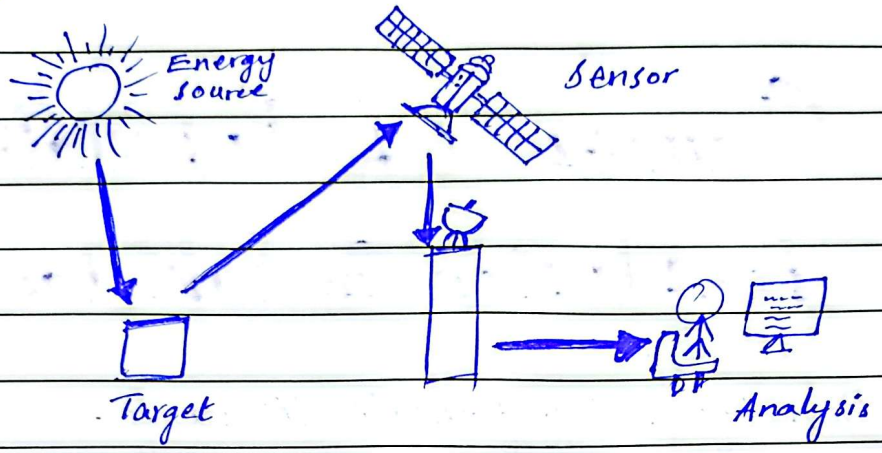
(b)

Remote Sensing :

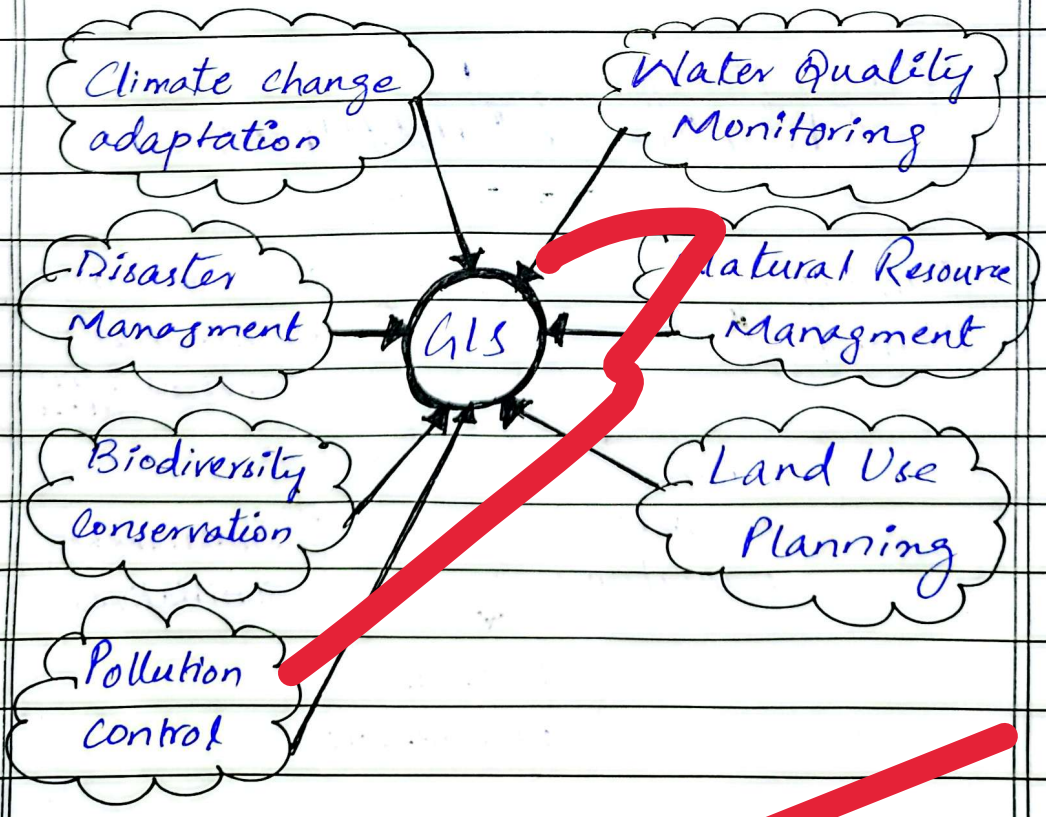
It is a technique or process of detecting & monitoring physical characteristics of an area by measuring

Date: _____

its reflected and emitted radiation from distance.



Role of GIS in Environmental Science



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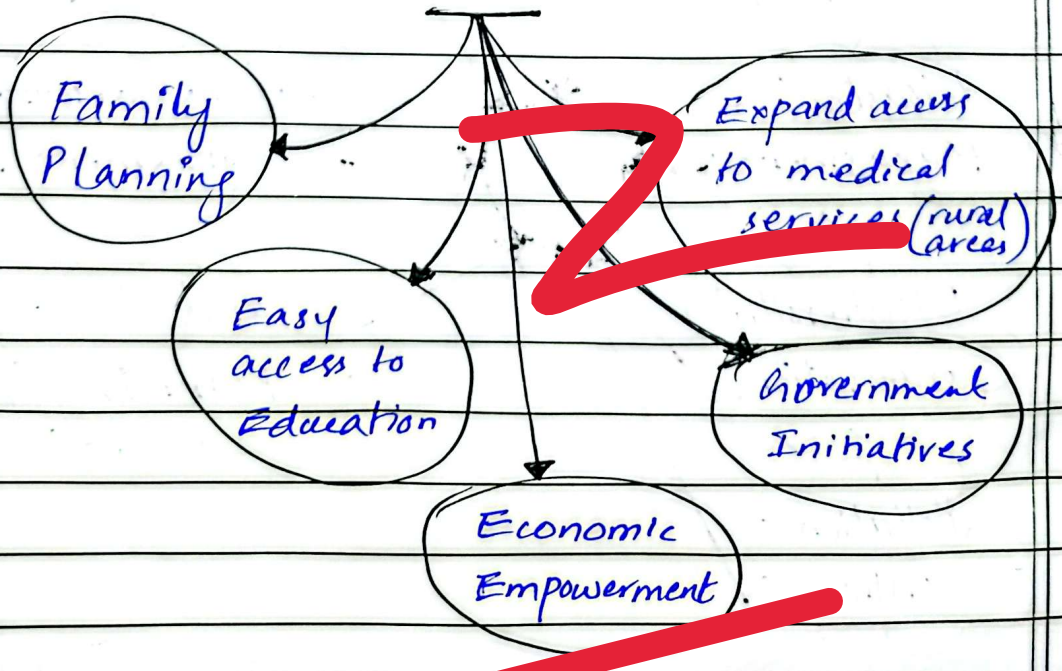
Date: _____

(a)

Causes Of Population Explosion in Pakistan

Poverty, low female literacy, early marriages, underutilized contraception methods and limited access to family planning, are the main causes of population explosion in Pakistan.

Control Measures



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SECTION-II

Q#07

(a)

Data

Diameter = 14cm

Use $\pi = 22/7$

TO Find

Volume = ?

Formula

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

Solution

$r = \frac{d}{2} = \frac{14}{2} = 7$cm

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

$V = \frac{88}{3}$

$\boxed{V = 29.33\ cm^3}$ Answer

Date: _____

(d)

Data

$a = 5$ cm

$b = 12$ cm

$c = 13$ cm

To Find

$A = ?$

$B = ?$

$C = ?$

Formula

$$\cos A = \frac{b^2+c^2-a^2}{2bc}, \quad \cos B = \frac{a^2+c^2-b^2}{2ac}$$

$$\cos C = \frac{a^2+b^2-c^2}{2ab}$$

Solution

$$\cos(A) = \frac{(12)^2+(13)^2-(5)^2}{2(12)(13)}$$

$$= \frac{144+169-25}{312}$$

$$= \frac{288}{312}$$

$$= 0.92$$

$$A = \cos^{-1}(0.92)$$

Date: _____

Q#08

(a)

Solution

Total distance walked

56 + 10 + 5 = 71

Hiker ends up 11.18 km

(b)

Add all shares

12F + 24F + 8F + 2F + F + F = 48F

48F = 9000

$F = \frac{9000}{48}$

F = 187.5

Total Amount 187.5

A = 22[illegible]

B = 4500

C = 1500

D = 375

E = 187.5

F = 187.5

ZEENAT

Date: _____

Date: _____

$$\cos(B) = \frac{(5)^2 + (13)^2 - (12)}{2\,(5)\,(13)}$$

$$= \frac{25 + 169 - 144}{130}$$

$$\cos(B) = 0.384$$

$$B = \cos^{-1}(0.384)$$

$$\cos(C) = \frac{(5)^2 + (12)^2 - (13)^2}{2\,(5)(12)}$$

$$\cos(C) = \frac{25 + 144 - 169}{120}$$

$$C = \cos^{-1}(0)$$

$$\boxed{C = 45^\circ}$$

(b)

Solution

Add ratio parts:

$1 + 2 + 3 + 4 + 5 = 15$

Divide total savings by total ratio parts:

$$\frac{25000}{15} = 1666.67$$

Smallest share ratio is "1" so

$1 \times 1666.67 = \boxed{1666.67}$

Answer

ZEENAT

Date: _____

(c)

(i)

The sequence follows a pattern of multiplying by 3.

$2 \times 3 = 6$

$6 \times 3 = 18$

$18 \times 3 = 54$

$54 \times 3 = 162$

"486" doesn't fit in series Answer!

(ii)

This is a sequence of prime numbers.

3, 5, 7, 11, 13, 17, 19

Next prime number is "17"

Answer!

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