

Do's and Don'ts for the General Science & Ability Paper
 Hi there! You are 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.

Part - II

Section I

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

Q.6 a) Answer.
 Given: Packets in flavors Apple : Berry : Cherry : Date = 3 : 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. Date - Apple = 35). I will solve that reasonable interpretation.

Formula: Let common factor = k. Apple = 3k, Date = 5k.
 So $5k - 3k = 35 \Rightarrow 2k = 35$
 Solution: $2k = 35 \Rightarrow k = 35 \div 2 = 17.5$.
 Berry = $6k = 6 \times 17.5 = 105$.

Answer: 105 Berry candies.
 (If you intended the other wording, it's contradictory as written, but this is incorrect 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 = $200 \times 0.25 = 50$.
 Sale price = $200 - 50 = 150$.
 Tax = $150 \times 0.06 = 9$.
 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 = $36 \div 18 = 2$ 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
- $\pi = 22/7$

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 cm³

(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 = $(1/15) \times \text{total}$

Searches. Based on that data, they show us the kind of posts or videos we enjoy the most.

Real life example.

1. Social Media: Apps like Instagram, Tiktok use our data (likes, views, and shares) to show us the kind of video we enjoy the most.
2. Online shopping: website like Amazon or Daraz suggest products based on what ~~you~~ we search or buy.
3. Maps and navigation: Google maps uses data from millions of phones to tell us the fastest route or where traffic is heavy.

Therefore data really feeds the modern world; just like it once did.

b) Answer

The expanding universe is like a balloon that is being blown up. If we make small dots on a balloon, and each dot stands for a galaxy. When the balloon is small, the dots are closer together.

As we blow air into it, the balloons grow bigger, and the dots move farther apart. The same happens with our universe. The space between galaxies is stretching, so galaxies

move away from each other, ^{and} as
the universe gets bigger. This shows
that the universe has no center.

It does not matter where we
are, it looks like everything else

is moving away. Even though

the universe is 3D and balloon

is 2D, this idea helps us
to understand how space grows.

Therefore, just like a balloon

gets larger when we blow air

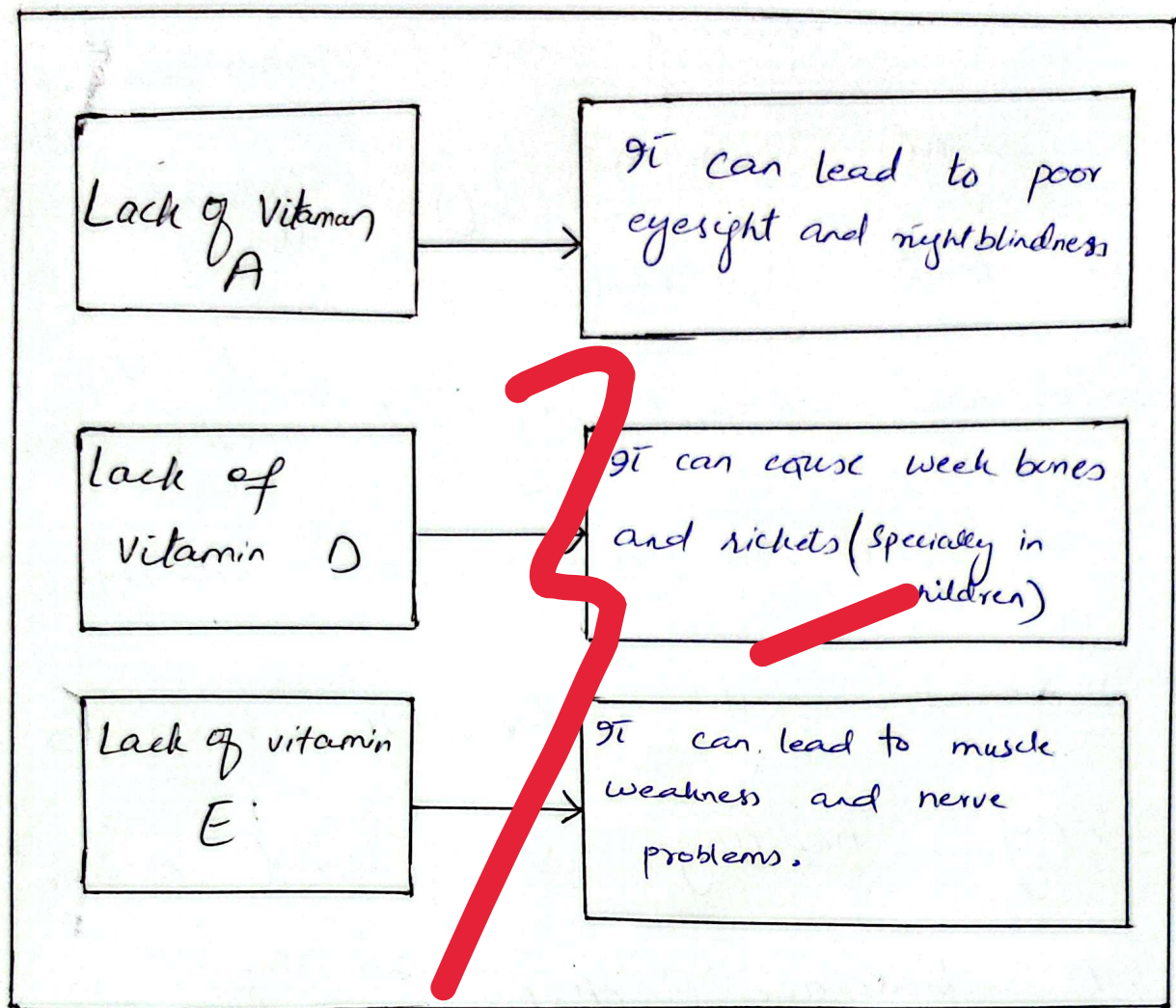
into it, the universe keeps

expanding and moving galaxies
apart over time.

- Answer.

A balance diet means eating the right amount of different kinds of foods so that our body gets all the nutrients it needs. like carbohydrates, proteins, fats vitamin mineral, and water. It help us stay healthy, strong, and active.

A balance diet includes fruits, vegetables, grains, milk, meat and plenty of water. if a person does not get enough vitamin A, D and E it can cause several health problems. Deficiency of vitamin A, D and E can cause following imbalances in human body.



d) Answer. GPS (Global positioning system)
Global positioning system (GPS) is a system that help us to find exact location on Earth. It works through a network of satellites that orbit around the earth. These satellites send

signals to GPS receivers on the ground. The receiver ~~can~~ calculates our position by measuring how long it takes for signals from at least four satellites to reach it. This process helps find our exact location.

Fiber optic:-

Fiber optic is a type of cable that carries information as light signal instead of electricity.

It is made of very thin glass or plastic fibers, because light travels very fast, fibre optics are used for

high speed internet, phone calls, and Acq/
data transmission over long distances
with very little loss or delay.

2D and 3D Location Measurement by
Satellites.

Satellites measure 2D location (latitude
and longitude) using signals from
at least three to four satellites.

To get a 3D location (latitude, longitude
and altitude) signals from four or
more satellites are needed. This
extra satellite measures height or
elevation above sea level, giving
a full 3D position.

Q.No. 3

5

(a) Answer.

Why cells from organelles.

Cell from organelles to make their work easier and more organized. Each organelle has a special job, just like workers in factory. Some make energy, some ~~some~~ make proteins and others store a transport material "by dividing work among organelles. the cell can function smoothly and efficiently."

Mitochondria in a human cell.

Mitochondria are known as the powerhouses of the cell. They produce energy in the form of

molecule called ATP (adenosin triphosphate),

through a process called cellular respiration.

So mitochondria play a very important role in keeping human cells alive and full of energy.

(b) Answer.

Doping.

It is the process of adding a small amount of another element (called a impurity) to a pure semiconductor.

like silicon etc. This changes shows how well it conducts electricity. Doping increases the number of free electrons or holes in the material, making it more useful for making electronic devices like diodes and transistors.

Types of Semiconductors.

(i) N-type Semiconductor.

N-type semiconductor made by adding elements that have more electrons than silicon, such as phosphorus or arsenic. These extra electrons act as negative charge carriers. The "N" stands for negative.

(ii) P-type Semiconductor.

The "P" stand for positive. It made by adding elements that have fewer electrons than silicon, such as boron or gallium, this create a hole (positive charge carriers) in the material.

(C) Answer

Merits of Volcanic Eruptions.

- (i) Fertile soil:
- (ii) New land formation
- (iii) Geothermal energy
- (iv) Tourism
- (v) Mineral resources.

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Demerits of volcanic Eruptions.

- (i) Loss of life and property.
- (ii) Air pollution
- (iii) Climate change
- (iv) Destruction of crops
- (v) Displacement.

/

Volcanic eruptions have both good and bad effects. They help nature in some way but can also cause serious damage.

1) Answer.

What is Dengue.

Dengue is a viral disease spread by the bite of ~~an~~ an infected Aedes mosquito, mainly Aedes aegypti.

It is common in warm and humid areas, especially during the rainy season. Dengue affects millions of people every year and can be serious if not treated properly.

Causative Agent

Dengue is caused by the Dengue virus (DENV), which has four types (DENV-1, DENV-2, DENV-3, DENV-4).

The virus spreads when an infected mosquito bites a healthy person.

Symptoms.

- High fever
- Severe headache
- Pain behind the eyes
- Skin rash
- muscle and joint pain.

Remedies and Prevention.

- There is no specific cure for dengue, but rest, fluids, and fever reducing medications ~~can~~ can help to overcome it.
- Prevent mosquito bites by using repellents, wearing long clothes and covering water containers to stop mosquito breeding. So dengue is a mosquito-borne viral disease that can be prevented by keeping our surroundings clean and avoiding mosquito bites.

Section II

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Q No 6# (9)

Flavors are in the ratio

Apple : Berry : cherry : date = 3 : 6 : 2 : 5

So Apple = $3n$

Berry = $6n$

cherry = $2n$

Date = $5n$

Apple candies exceed date candies by 35

that means

$$3n - 5n = 35$$

$$-2n = 35$$

but apple greater than date

So,

$$2n = 35$$

$$n = 17.5$$

Now berry candies

$$\text{Berry} = 6n = 6 \times 17.5 = 105$$

105 berry candies.

(b) Answer

Original price = \$200

Discount = 25%

25% off $\rightarrow$ ~~\$200 - \$50 = \$150~~

6% tax $\rightarrow$ ~~\$150 + \$9 = \$159~~

Total amount paid = \$159.

(c) Answer

Distance = 36 km

Speed = 18 km/h

Start Time = 1 PM

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

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

Time = 2 hours

$$\text{So, } \Rightarrow 1 + 2 = 3$$

The ~~bicycle~~ bicycle reaches at 3 PM.

(d) Answer

(i) STSTAICITS $\rightarrow$ STATISTICS

(ii) LGEBMAR $\rightarrow$ ALGEBRA

Q No 7

(a) Answer

Given data.

Diameter = 14cm $\rightarrow$ Radius = $\frac{14}{2}$ = 7cm

Solution.

Formule for volume of a sphere -

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

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

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

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

$$V = 1437.3$$

$$V = 1437.3 \text{ cm}^3$$

(b) Answer.

Ratio $1:2:3:4:5$

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

Total saving $= 25000$ Rs

Value of 1 part $= 25000 \div 15$
 $= 1666.67$ Rs

So, smallest share (1 part) $=$ Rs. 1666.67

(c) Answer

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

$$2 \times 3 = 6$$

$$6 \times 3 = 18$$

$$18 \times 3 = 54$$

$$54 \times 3 = 162$$

$$162 \times 3 = 486$$

Each number multiplied with 3 to get the next number. So, there is no error, the series is correct.

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

These all are prime numbers.

After 13 the next number is 17.

So, the missing number is 17

New Series 3, 5, 7, 11, 13, 17.

(d) Answer

Triangle Sides: 5, 12, 13

So $5^2 + 12^2 = 13^2$, right angle triangle.

One angle is 90°

$$\tan A = \frac{5}{12}$$

$$A = 22.6^\circ$$

Other angle is $180 - (90 + 22.6) = 67.4^\circ$

Angles: 22.6° , 67.4° , 90°