

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 your answers fully and clearly. For a 5-mark part, show all steps and provide clear explanations.

Date: Oct 21, 2025 Day: M T W T F S

General Science & Ability

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

Q.6
 a) Candy ratio problem
 Given: Packets in flavors Apple - Berry - Cherry - Date = 3 : 5 : 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 = 2 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 3:2). 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 = 2k.
 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 way, it would be 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 = $200 \times 0.25 = 50$
 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. 1- Smart Phones

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 cm³

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 1st part).

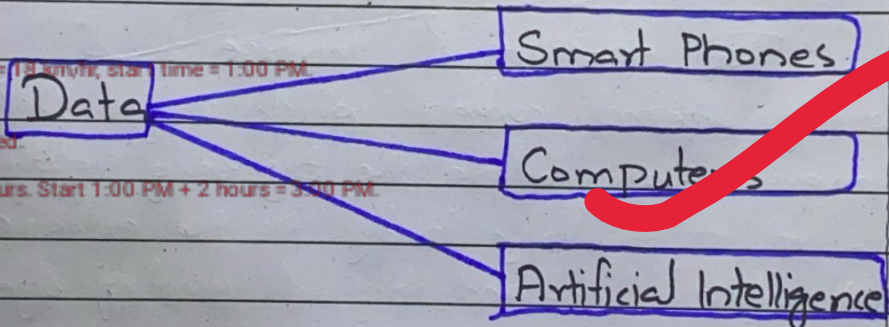
Formula: Part = $\frac{\text{Ratio Part}}{\text{Sum of Ratios}} \times \text{Total}$
 = $\frac{1}{1+2+3+4+5} \times 25,000$
 = $\frac{1}{15} \times 25,000$
 = 1666.67

(Part-II)
 Section-1

Q.No.2

a- Yes, data serves as a new oil, it contains all the information for proper and specific functioning of electronic devices. For instance, without data devices like computers, smartphones and electric vehicles can not work properly as they need command to carry out tasks.

Examples How Data Serves as New Oil



Without data, smart phones or even ordinary phones are useless, they work on the data stored in them which makes them able to perform tasks. For instance, when we want to call someone, we click on the call log, it is the particular data installed which enable signals to travel and

Date: _____

Day: MTWTFS

make communication possible.

II. Computers

Another important everyday device working on data is computer. Computers work on data in the shape of Operation System which gives it the structure. It enables running of programs i.e. utility programs and software programmes.

III. Artificial Intelligence

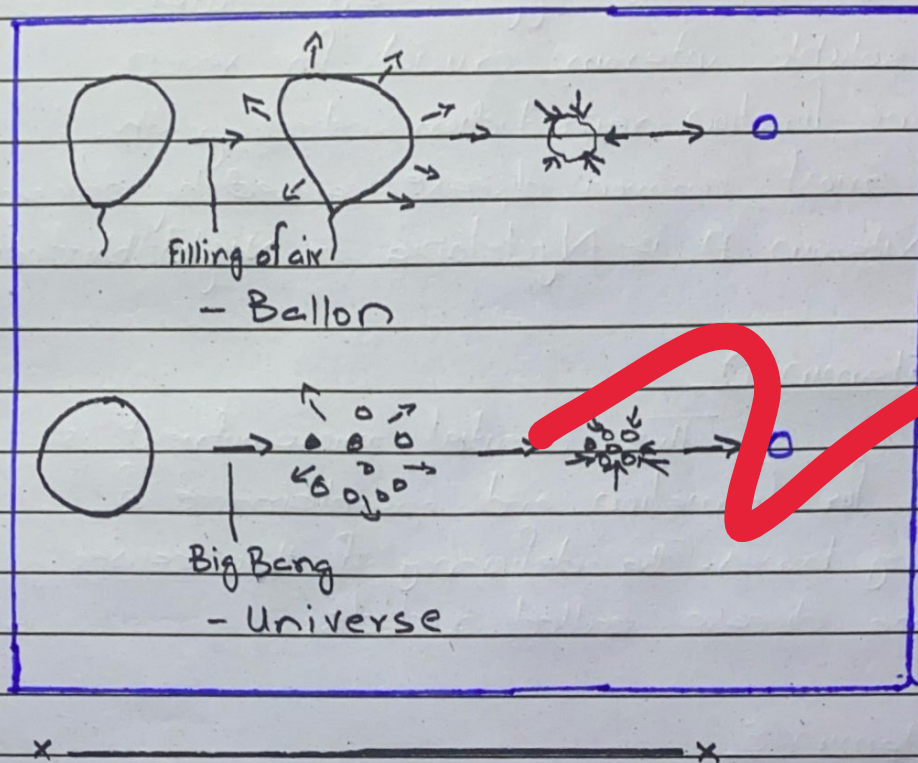
World is in the new era of AI, it also uses data and without it, it is useless as it needs commands and data to execute any task therefore making data as a new oil.

b- The expansion of universe is a widely accepted concept which suggests that universe was before the Big Bang tightly packed in a large body. As the explosion took place, it caused beyond counting objects like stars, planets and comets etc. to be flown in all direction. It's resemblance with a balloon is that, space was empty, and it is because of that empty space that the objects are still moving from 4.5 billion years. It is also believed that a balloon explodes after reaching a certain point in the same manner, the universe has a point and after that all the scattered objects

Date: _____

Day: MTWTFS

will again move towards one another.



c. Balanced Diet

A balanced diet is the diet which contains all the essential macro-nutrients and micro-nutrients required by body for its proper functioning.

Deficiency of Vitamin A, D and E

Vitamin A → Night blindness

Vitamin D → Rickets

Vitamin E → Anemia

Date: _____

Day: **M T W T F S**

1- Vitamin A

Vitamin A, an important micronutrient found in fish and eggs is an essential fat soluble vitamin crucial for vision, immune function, reproduction and cell growth.

The most common disease caused by deficiency of Vitamin A is Nyctalopia or Night blindness.

2- Vitamin D

This essential micronutrient is used for formation and maintenance of strong bones. The deficiency of this causes bone disease called rickets.

3- Vitamin E

This vitamin is essential for healthy skin, hair and immune function.

The deficiency of vitamin E most commonly causes anemia or lack of red blood cells.

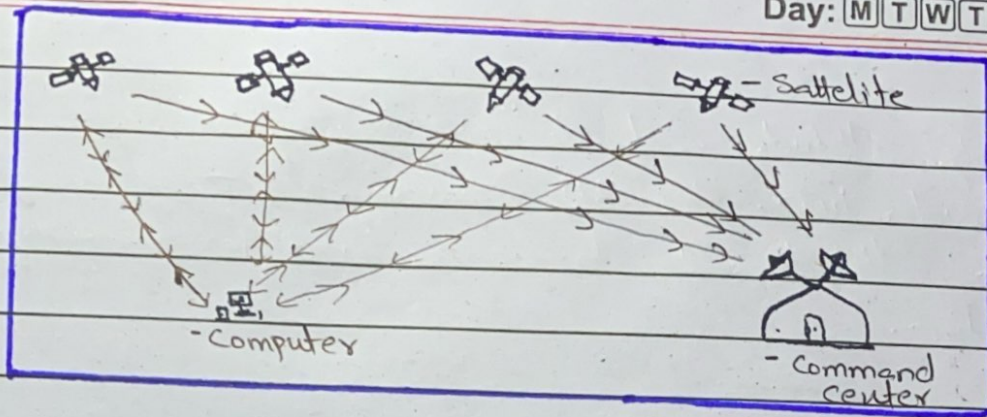
X ————— X

d- Working of GPS

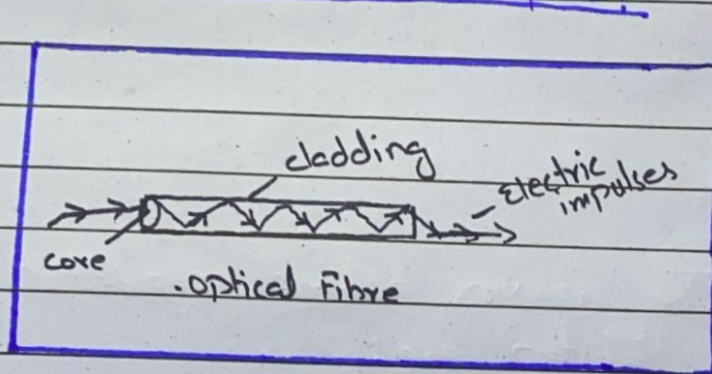
GPS or Global Positioning System is used to track the exact location of any device. The working of GPS depends on satellites. There are around 35 satellites however, for estimation of exact location of a thing or person 4 are used and this is called Trilateration. Devices like mobiles and computers send signals to satellites which then moves to command center to know the exact location.

Date: _____

Day: **M T W T F S**



What is fiber optic?



Fiber optic or optical fibre is a tube that is used for transfer of electric signals without any interruption and it is able to get the signals transferred to long distance. The uninterrupted transfer of signals when using fiber optic is because of total internal reflection.

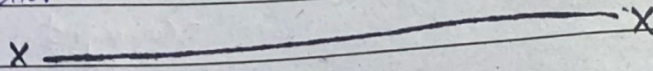
Measuring 2D and 3D locations by Satellites

For calculation and measurement of data, normally 4 satellites are used and the image and location that it provides contain all elements to determine its exact location that are Altitude, length, distance and time. In 2D measurements

Date: _____

Day: MTWTFS

only altitude and distance is taken into consideration. In 3D measurement, time along with altitude and distance is used for measuring location.



Q. No. 5

9-

Causes of Population Explosion in Pakistan

The reasons behind population explosion in Pakistan are:

- High Fertility Rate
- Low Contraceptive Prevalence
- Illiteracy

1- High Fertility Rate

Globally, the normal fertility rate is around 2.1. However, in Pakistan, the fertility rate is 3.6 which makes it hard to control the population according to the census of 2023.

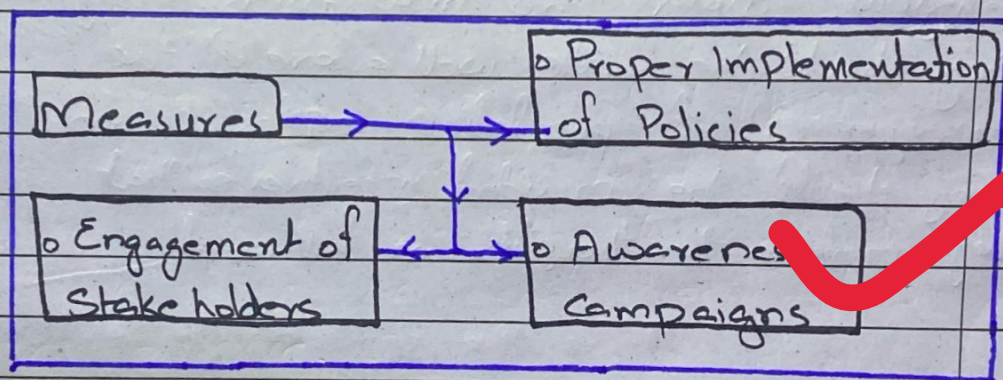
II- Low Contraceptive Prevalence

The contraceptive prevalence in Pakistan is just 34%. This means that majority of population is unaware of the techniques for child control leading to population explosion in Pakistan.

Q1 - Illiteracy

It is another important factor undermining sustainable growth in Pakistan. According to Economic Survey of 2024-25, the total literacy rate in Pakistan is just 60.67%. This leads to many misconceptions that people feel are against the nature and their religious teachings leading to avoidance of birth control measures and causing population explosion.

Measures to Control Population Growth



1- Proper Implementation of Policies

The major problem with Pakistan is that it fails in proper implementation of policies when it comes to governance. The international practices and policies of population control should be implemented in true spirit.

II- Awareness Campaigns

General public specially those living in rural areas should be made

aware of the consequences that overpopulation causes in the country and how it impacts not only nation but their own well being and welfare as well due to scarcity of resources. social media and news channels along with dramas should be used to promote idea of small family and contraceptive prevalence.

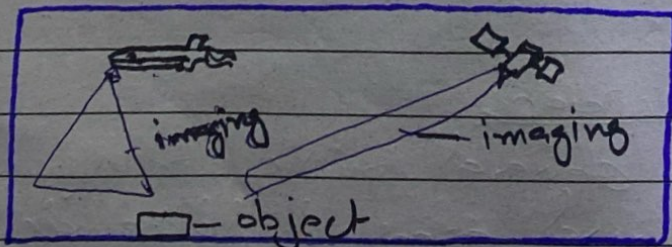
III - Engagement of stakeholders

All stakeholders and influential people should be involved, those include religious scholars and tribal chiefs. Firstly, they should be made well aware of the consequences of population explosion, then they should be provided incentives so that they promote the thoughts in full zeal.

x ————— x

b. Remote Sensing

It is the science of acquiring information about an object or phenomenon from a distance, without making physical contact. It involves using sensors typically on satellites or spacecraft, to detect and measure reflected or emitted energy.



Role of GIS in Environmental Science

GIS or Global Imaging system plays a cursory role in environmental sciences. It helps observe any land without directly being in contact with that piece of land. This method is also used to track water movement, forest density and better help in environmental understanding and preservation.

x ————— x

C.

The Atmosphere is Blanket of the Earth

The atmosphere of Earth is made up of composition of different gases that serves as its protective layer and provides adequate condition for living. Firstly, the gas used in composition of atmosphere where we breathe consists of gases:

Nitrogen - 78%
Oxygen - 21%
Argon - 1%
Carbondioxide, - 0.93%
other gases

Along with these gases, another important gas serves as a protective layer around

The Earth. The ozone (O_3) is a chief gas that protects Earth from ultraviolet rays of the sun, serving as a blanket to Earth.

X ————— X

d-

(i) Hydrometer

It is an instrument used to measure the density or relative density of liquids based on buoyancy. It is a sealed glass tube placed in a liquid and sinks or floats to specific mark on its calibrated scale, indicating the liquid's density compared to water.

(ii) Epicenter

It is the point on the Earth's surface directly above the focus (point where earthquake emerges).

(iii) Eye wall of Cyclone

It is a ring of intense thunderstorms surrounding the calm eye, where winds are strongest, rainfall is heaviest, and storm surge is most powerful. It is most destructive part of a cyclone.

Date: _____

Day: MTWTFS

(iv) ~~Troposphere~~ Deep focus

Deep focus refers to deep-focus earthquakes, which have their origin point between 70 and 700 kilometers below the Earth's surface.

(v) Light Year

It is an astronomical unit used to measure long distances among planets and ~~the~~ celestial objects.

x ————— x

Section II

Q. No. 6

d. Unscrambling words

i - Statistics

ii - ALGEBRA

x ————— x

Q. No. 7

b. solution

Total saving = 25,000

Smallest = ?

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

$$1 \times 1666.67 = 1666.67$$

x ————— x

Date: _____

Day:

M	T	W	T	F	S
---	---	---	---	---	---

c- Spot the error/ complete the series

1- All are correct as they are multiplied by 3.

$$2 \times 3 = 6$$

$$6 \times 3 = 18$$

$$18 \times 3 = 54$$

$$54 \times 3 = 162$$

$$162 \times 3 = 486$$

This makes the series correct.

ii) 3, 5, 7, 11, 13, 15, 19
x-----x

THE END

~~✗~~