

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:

- QUESTION 2:**
a. *Data is a new oil. Do you agree? Justify with your simple opinion. 3 marks*
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.

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 : 6 : 2 : 5.

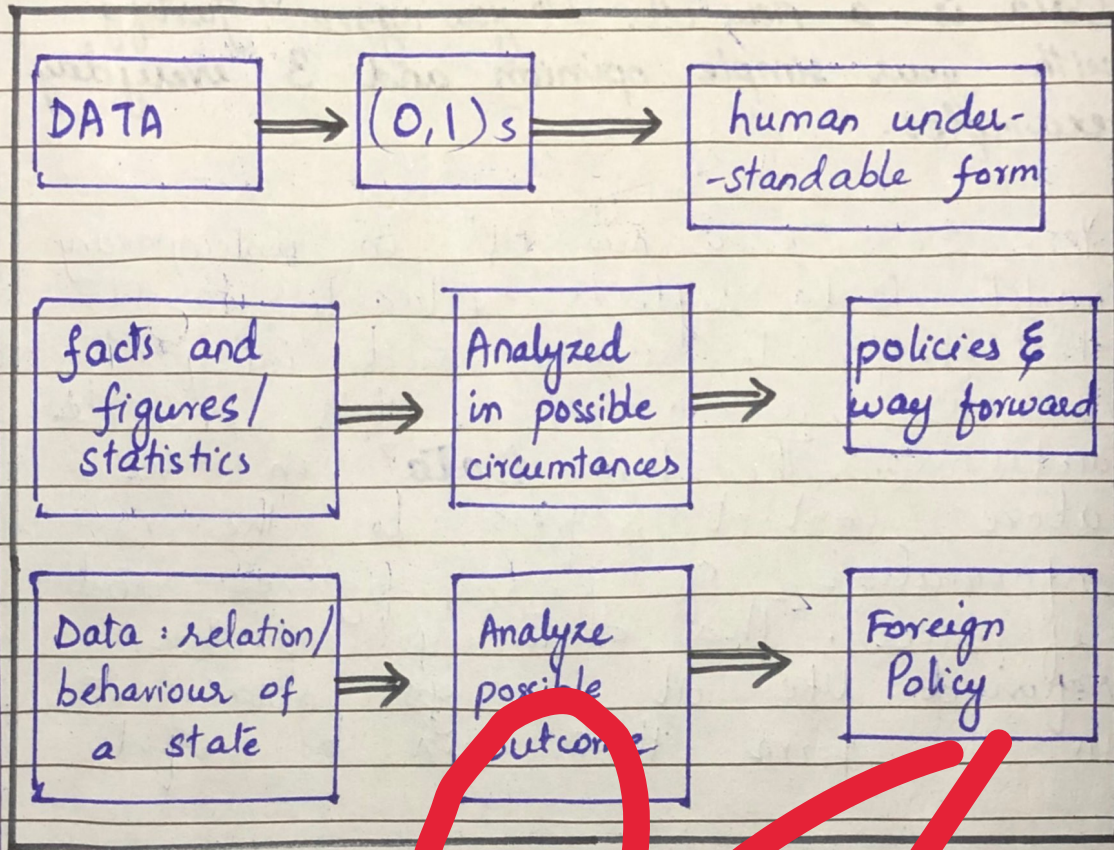
Asked: If Apple candies exceed Date candies by 35, how many Berry candies are there?

Note (consistency check): The ratio shows Apple = 3 parts

Day: _____

Date: _____

EXAMPLE :



EXAMPLE 1: DATA IN COMPUTER

A computer only understands the binary language. This means that the language of 0s and 1s. This language is not understandable by human beings. Hence the data of 0s and 1s is converted to human language so, it can be read and understood.

EXAMPLE 2 : FACTS AND FIGURES

The facts and figures presented by organizations through surveys cannot be solved until it is analyzed by different lens. For instance, data statistics of poverty. This data must be analyzed by the lens of cause and effect. to figure out the possible solutions to that particular issue

EXAMPLE 3 : INTERNATIONAL RELATIONS

In International Relations, the state behaviour and its policies are analyzed to shape the foreign policy of its friendly and rivalry state. For instance, the military policy of china is a "data" to India. India has to analyze the possible threat and shape its own military policy / foreign policy.

CONCLUSION

In contemporary world, "data" is crucial as "oil" to fuel the needs and shape the understanding.

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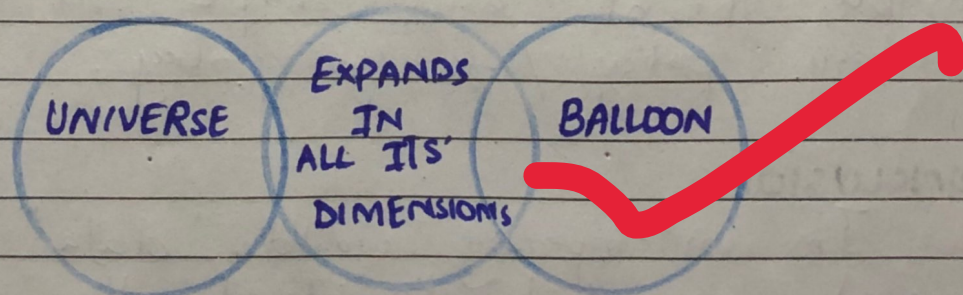
Date: _____

b. Universe is expanding, how it resembles with balloon blowing in working.

The universe is expanding and it is a scientifically proven phenomenon. However, it is resembled with balloon due to its similarity in expanding and possible outcomes of expanding.

SIMILARITIES BETWEEN A BALLOON AND UNIVERSE EXPANSION:

Both the universe and the blowing of balloon expands in all directions. A balloon when blowed expands does not expand into a linear direction rather it expands in all its dimensions.



POSSIBLE OUTCOMES OF UNIVERSE THAT RESEMBLES TO A BALLOON:

Day: _____

Date: _____

POSSIBILITY 1: IT WILL BURST AND SCATTER LIKE 'BIG BANG'

One possible that is assumed by scientists that universe will expand and burst like the "Big Bang". This resembles to the balloon that when balloon is blown more than its capacity and gets burst and scatter.

POSSIBILITY 2 : UNIVERSE WILL COLLAPSE AND SHRINK :

Another possibility is that universe will expand to its maximum reach and then collapse. After collapse it will ~~shrink~~ shrink. Similarly, when the ~~air~~ air in the balloon get its way out, the balloon starts to collapse and eventually will shrink to its minimal size / initial size.

CONCLUSION :

This, the expansion of universe is resemble to the blowing of balloon in three-different manners.

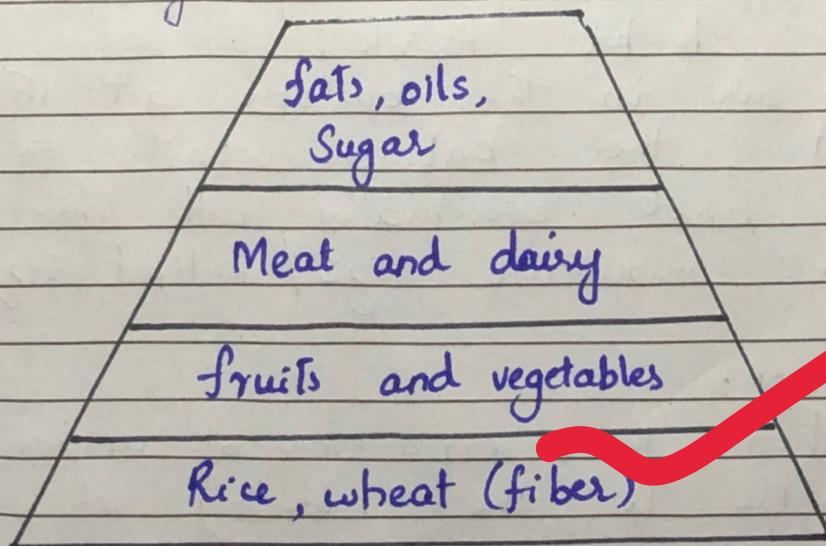
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Date: _____

c. What do you mean by balance diet?
Deficiency of vitamin A, D and E can result into what type of imbalances in human body.

A balance diet refers to the idea of taking the right portion of food from all the classifications in a day.

An adequate amount of food must be taken such as, fiber, fruits, vegetable, dairy, meat, water in a day. Any sort of imbalance intake of portion will lead to sufficiency or deficiency in the body. Thus, a balance diet is necessary for a human body to function properly and keeps it healthy.



Pyramid of Balance Diet

DEFICIENCY OF VITAMINS :

VITAMIN
A

SKIN DULL,
AGING

Vitamin A which also refers to the "Retinol" is essential for skin and body nourishment. The deficiency of vitamin A may lead to imbalances in the skin related issues such as, aging, dullness, fine lines etc.

VITAMIN
D

BONES/
RICKETS

Vitamin D mostly affects the health of the bones. The deficiency of vitamin D will lead to ~~bone~~ weak bones and chronic deficiency may result into "rickets".

VITAMIN
E

HAIR, NAILS,
SKIN RELATED
ISSUES

Vitamin E mostly affects the skin, hair and ~~and~~ nails. The deficiency

Day: _____

Date: _____

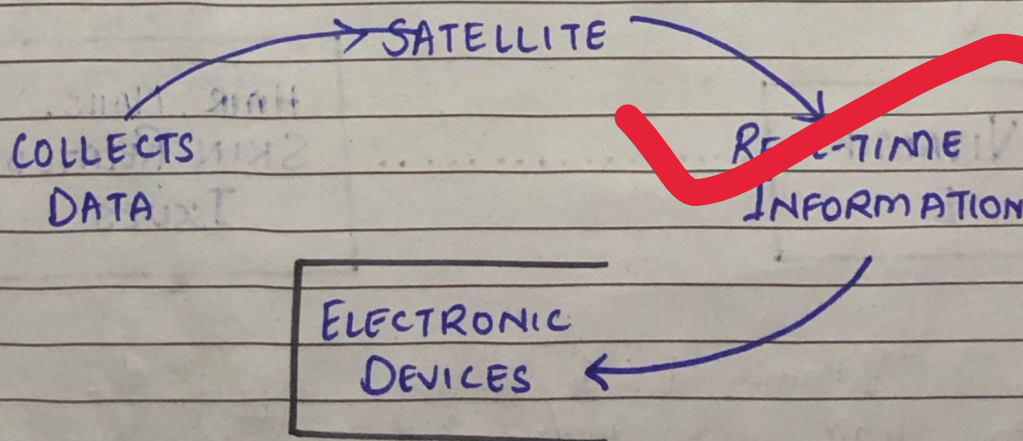
of vitamin A will result in the dryness of skin, hair and nails.

- d. Discuss the working of GPS. What is fiber Optic? How 2D and 3D locations are measured by satellites?

GPS - GLOBAL POSITIONING SYSTEM:

"GPS" stands for Global Positioning System. It refers to the phenomenon of tracking and analyzing of different data and the process it to represent it in useful information. One prominent example is "digital maps" in the electronic devices.

GPS collects the data of routes through the satellite, and process it and then represent it in the form of maps.



FIBER OPTICS :

Fiber Optics is the form of cable that is used for the transfer of data, signals, or electronic current from one place to another. The fiber Optics is different from other ~~for~~ regular kinds of cables or wires. Because it is made up of **glass** that increases its efficiency.

The fiber optics works on the phenomenon of interior refraction. This methodology of transfer of data or electronic current without any loss of delay.

For instance, it is ~~used~~ widely use ~~to~~ for internet connection throughout the globe.

2Ds AND 3Ds LOCATIONS MEASURED BY SATELLITES :

2D. LOCATION :

The 2D location is captured by satellite using image capturing. Satellites capture numerous images and then convert it to high

Day: _____

Date: _____

Definition Resolution. This helps to understand or locate the information or ways on the earth.

3D LOCATION :

The advance form of location i.e. 3D location that is introduced recently. This 3D location in which it shows the streets, landmarks and even the building as it is. The 3D location which is by "Google maps" is obtained by using 360° camera. This camera was moved throughout the streets placed on a vehicle that recorded the data in pictorial form. and ~~sent~~ fed it into the satellite.

Hence, through this technology 3D locations are measured by satellites.

QUESTION 3:

- a. Why cells form organelles? Discuss mitochondria in a human cell.

Cell is a basic form of life. But, cell has further its parts which are called "organelles". These

Day: _____

Date: _____

organelles have different functions and responsibilities that helps the cell to function with efficiency. Hence, cell forms organelles for its function and life. There are eight organelles of cell and each has different function, such as, cell membrane, mitochondria, ribosomes, lysosomes, nuclear, E.R and golgi bodies, and nucleus.

FUNCTION OF MITOCHONDRIA

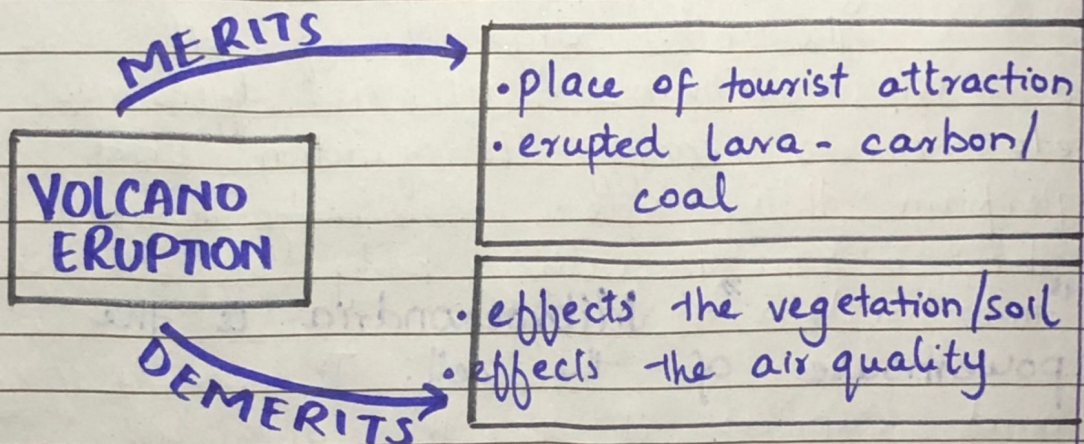
The other organelles of cell such as cell membrane, ribosomes, lysosomes, etc needs energy to function and perform their role. Similarly Therefore, the energy generating body of cell is "mitochondria". Mitochondria is the powerhouse of the cell. It creates energy and supplies it to the other cell organelles.

b. What is doping? Discuss different types of semiconductors.

c. State some of the merits and demerits of volcanic eruption.

Volcano eruption is the natural phenomenon in which the molten lava underneath the earth's surface erupts through the ducts. These ducts are usually in a mountain like structure called "volcano".

The eruption of volcano have not certain merits and demerits, these are,



MERITS :

- ① Volcanoes are center of tourist attraction. It can be a landmark that people visit and wonder the natural phenomenon of earth.
- ② The Erupted molten lava when cools down, turns into the coal. This coal can be used for energy purpose.

DEMERITS :

- ① The areas nearby the volcano have the soil that does not support vegetation. ~~Even if the vegetation made possible in some areas, it gets destroyed when volcano erupts.~~
- ② The pollution i.e. smoke produced during the volcano eruption is so immense that it affects the air quality of the adjoining areas.

d. What is dengue? Discuss symptomology, causative agents and remedies.

DENGUE :

Dengue is a disease that is caused by biting of mosquito. It is mostly reach to its maximum spread after the rainfall. Dengue mostly affect the people with weak or low immunity.

SYMPTOMS OF DENGUE :

The most prominent symptoms of dengue are:

- intense / high fever.
- Chills

Day: _____

Date: _____

- nausea and fatigue.

CAUSATIVE AGENT:

Dengue is caused by biting of female mosquito also known as "anopheles aegypti". This mosquito gets its habitat on the dirty ~~water~~ and still water. This is why, it is usually spread after the monsoon season. Hence, the mosquito cannot survive in the heat of summer and cold of winter, thus, it only appears during the moderate temperature.

REMEDIES:

Pre-active measures:- it must be ensured that your surrounding is free from mosquitoes by using mosquito repellent products, netting, and any sort of still water.

Pro-active measures / Reactive measures

As soon as the symptoms appear, it must be tested through the blood-tests. ~~It~~ It must be consulted by a doctor and take the necessary medications and precautions prescribed by the medical professional.

Day: _____

SECTION-II

Date: _____

QUESTION 6

- a. A store has packets of candies in flavours Apple

Data:

ratio of candies $\Rightarrow$ a b c d
3 : 6 : 2 : 5

according to condition

$$\text{apple (a)} = d + 35$$

$$\text{berry} = ?$$

Solution:

$$d + 35 : 6 : 2 : 5$$

since $d = 5$

$$5 + 35 : 6 : 2 : 5$$

$$40 : 6 : 2 : 5$$

The amount of berries remained unchanged i.e. 6.

- b. Data:

$$\text{price} = 200$$

$$\text{discount} = 25\%$$

$$\text{tax} = 6\%$$

$$\text{total discount} = 25 + 6 = 31\%$$

Solution.

first calculate the discount,

$$\text{formula} \Rightarrow \text{discount \%} = \frac{\text{discount}}{\text{price}}$$

$$25\% = \text{discount} \times 200$$

$$\text{discount} = \frac{200}{25}$$

$$\text{discount} = \text{original price} - \text{discount \%}$$

$$\begin{aligned}\text{discount} &= 200 - 25\% \\ &= 200 - \frac{25}{100}\end{aligned}$$

$$= \frac{20,000 - 25}{100}$$

$$= \frac{19,975}{100}$$

$$= 199.75$$

c. **Data:**

$$\text{distance} = 36 \text{ km}$$

$$\text{speed} \text{ (i.e.) time} = 18 \text{ km/h}$$

$$\text{time } (t_2) = ?$$

$$\text{speed} = \frac{\text{distance}}{\text{time}}$$

$$18 = \frac{36}{t}$$

$$t = \frac{36}{18} \times 2$$

$$\text{time} = 2 \text{ km/hour.}$$

Day: _____

Date: _____

Thus if the bicycle starts at 1pm and then time it takes is 2 hours. then,

$$1 + 2 = 3 \text{ pm.}$$

"The time it reaches to the destination will be 3pm."

d. **STATISTICS :**

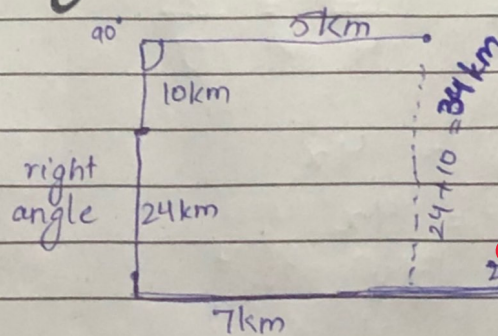
STATISTICS

LEGEBMAR :

G AMBLER

QUESTION 8

a. diagram



Solution :

$$\text{Total distance covered} = 7 + 24 + 10 + 5 = 48 \text{ km}$$

The distance from the starting point he covered is = 34 km

Day: _____

Date: _____

c Rectangular box = $8\text{m} \times 6\text{m} \times 4\text{m}$.

find area and volume

area of rectangle $A = L \times w$

$$A = 8 \times 6$$

$$\boxed{\text{Area} = 48\text{m}}$$

Volume of rectangle = $V = L \times w \times h$

$$V = 8 \times 6 \times 4$$

$$V = 192\text{ km}$$

$$\boxed{V = 192\text{ km}}$$

$$\begin{array}{r} 348 \\ \times 4 \\ \hline 1392 \end{array}$$

d.

Men

$$4 \uparrow$$

$$72$$

Women

$$4 + 1 = 5 \uparrow$$

$$50 + x$$

$$\frac{4}{72} = \frac{72}{4} = \frac{x}{5}$$

$$5(72) = 4x$$

$$360 = 4x$$

$$x = \frac{360}{4} = 90$$

$$x = 90$$

$$\boxed{x = 7}$$

$$\begin{array}{r} 72 \\ \times 5 \\ \hline 360 \end{array}$$

Thus, Amna consumes 7 kgs.