

Dos and Don'ts for the General Science & Ability Paper
 Hi there — you've prepared well. Remember, knowing the answer 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 formulas 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.

DATE: 21-10-2025

DAY:

GSA

Question no 4:-

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 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. You'd 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 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 = $25\% \text{ of } 200 = 0.25 \times 200$.
 Sale price = $200 - \text{discount}$.
 Tax = $6\% \text{ of sale price}$.
 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 $\div$ 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 cm^3 .

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

Discuss different methods of solid waste management?

Solid waste management basically is a method that used to minimize the hazardous impact on environment and maintaining public health and also conserving natural resources.

There are method which followed step by step.

Recycling:-

Recycling is the process of reuse, those things that usable after converting into new products

Example:-

Those things that reuseable such as shopping bags, paper, plastic, glass and metal.

- plastic import every year around 40 tons to reuse and make other new product with it.

Compositing:-

Compositing is the process of decomposition of all organic waste.

Incineration:-

Burning waste material on high temperature to reduce volume.

Landfilling:-

Landfilling is a method of solid waste disposal where waste is buried in a landfill to reduce health risks and prevent from contaminating environment.

Waste to energy:-

It is a benefit process where waste converting into energy such as biogas.

Segregation:-

Segregation is the process in which do separation of waste material such as biodegradable and non-biodegradable at source.

(a)

Chlorophyll

Chlorophyll is a pigment that present in the plants.

It is very important for the plant, during photosynthesis it gives colour to plant which is green.

Without this pigment, photosynthesis can not takes place in plants because chlorophyll takes radiation from the sunlight.

Chlorophyll takes blue and red wavelength and make green colour. And also without chlorophyll plants cannot survive on the earth.

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(b)

Ribosomes in protein synthesis :-

Ribosomes:-

Ribosomes are complex molecular machines found in cell, which responsible for translating mRNA into specific sequence of amino acids that then fold into protein. ribosomes attached with rough endoplasmic reticulum.

Role of ribosomes in protein synthesis

Translation:-

Ribosomes read the sequence of nucleotides in mRNA, then formed amino acids into

DATE: _____ DAY: _____
polypeptide chain.

Assemble amino acids:-

Assemble amino acids
converting into polypeptide
chain of protein.

Polypeptide chain formed:-

Polypeptide chain formed after
assembling amino acid. At last
chain fold into functional
protein.

(d)

Define terms:

Biofuel:-

Biofuel is a type of

renewable energy. This energy
make from waste material
through the process of transester-
fication.

Examples:-

Ethanol and biodiesel.

Adulteration:-

Harmful substances adding
into pure food called
adulteration.

Hydrosphere:-

All the water bodies on
the earth called hydrosphere.
such as ocean, rivers, lakes,
ground water.

Troposphere:-

Troposphere is the first layer of atmosphere, which has distance from earth is 50 km. It is a cold layer, and also protect from harmful gases.

Isotopes:-

Isotopes which has same atom of element with same proton but different neutrons.

Examples:-

C^{12} , C^{14}

Question no 3:-

(a)

Why cell form organelles?

Cell form organelles because of, it perform their function accurately and with efficiency such as a factory has different department to do work with efficiency and accurately.

Mitochondria in human cell:-

Mitochondria is a "power house" make energy in the form of **ATP** (Adenosine triphosphate) through cellular respiration.

Structure:-

Mitochondria has double membrane. Outer membrane and inner membrane.

Outer membrane:-

outer membrane protective and smooth shaped.

Inner membrane:-

Inner membrane folds cristae to increase surface area.

Inside of mitochondria has fluid called "matrix" including ribosomes, DNA.

Mitochondria in human cell:-

mitochondria gives energy in human body where needed such as

- muscles (for movement)
- Brain (for nerve cell)

(b)

Doping:-

Adding impurities in pure semiconductor such as (silicon, Germanium), to increase their conductivity, is known as doping.

Example:-

If add 3 and 5 group elements in 4 group to increase conductivity.

Types of semiconductor:-

There is a two type of semiconductor.

N-type

P-type.

N-type:-

It is negative type of semiconductor. Doped pentavalent impurities. Having five atoms in their valence shell, such as Arsenic (As), Antimony (Sb), phosphorous (P).

It has extra electrons that freely move, and minor holes.

P-type:-

It is positive type of semiconductor. Doped trivalent impurities. Having three atoms in valence shell which two bonds, one incomplete. such as Boron (B), Barium (Ba) and Indium (In).

It has extra holes but

minor electrons.

(C)

Volcanic eruption:-

Volcanic eruption is a ash and lava that break down and escape from a volcano onto the ~~Earth's~~ surface

Merits:-

Fertile soil:-

Due to volcanic eruption where minerals in rich like potassium and calcium to make fertile soil.

Landforms:-

Land formed new because of volcanic eruption like

icelands.

Geothermal energy:-

Geothermal energy generates from volcanic eruption provides water through pipes. For example icelands generates energy from this process.

Demerits:-

Loss of life and property:-

Destruction of property and loss of life where volcanic erupted due to molten rocks which escape from the earth's surface.

Toxic gases:-

Releases toxic gases like sulfur dioxide which

polluted atmosphere and make
reason to blocking sunlight,
that trigger climate change.

Vegetation and habitats:-

Due to volcanic eruption
vegetation destroyed and also
habitats of animals then take
years to normal.

Section II

Question no 6:-

(a)

Apple candies = 3

Date candies = 5

suppose "x" common

Apple candies exceeds by 35

DATE: _____

DAY: _____

$$3x - 5x = 35$$

$$2x = 35$$

$$x = 35/2$$

$$x = 17.5$$

$$\text{Berry candies} = 6x$$

$$6(17.5) = 105 \text{ ans.}$$

(b)

$$(\text{Total saving} = 25000)$$

$$\text{camera priced at} = 200 \$$$

$$\text{Discount} = 200 \times \frac{25}{100}$$

$$50$$

$$200 - 50 = 150$$

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

$$\frac{6}{100}$$

$$0.06 \times 150 = 9$$

$$\text{total} = 9 + 150 = 159 \text{ ans.}$$

Paid.

(c)

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

$$\text{Speed} = 18 \text{ km/hr}$$

$$t = ?$$

$$t = \frac{d}{s}$$

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

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

(d)

Statistics

Algebra

Question no 7:-

(a)

$$r = ?$$

$$\text{diameter} = 14 \text{ cm}$$

$$14/2 = 7$$

$$\pi = 22/7$$

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

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

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

$$1.33 \times 3.14 \times 343 = 347.17$$

(b)

$$\text{Total saving} = 25000$$

$$\text{ratio} = 1 : 2 : 3 : 4 : 5$$

$$\text{sum of ratio} = 15$$

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

$$= 1666.6$$

$$\text{low share} = 1 \times 1666.6$$

$$= 1666.6 \text{ Ans}$$

(C)

Complete series

i- 2, 6, 18, 54, 162, 486

$$2 \times 3 = 6$$

$$6 \times 3 = 18$$

$$18 \times 3 = 54$$

$$54 \times 3 = 162$$

$$162 \times 3 = 486$$

All are correct

ii-

3, 5, 7, 11, 13, 17

odd numbers.