

GSA Mock - OCT Summ 21
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:

SEC-I

QNO 3

- Q.1. why cells form organelles? Discuss mitochondria in human cells.
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. To compartmentalize its work, cell produces energy efficiently. These organelles have small structures with cell performing different functions efficiently without any interference. Common organelles include Endoplasmic reticulum, Ribosome, Golgi apparatus and mitochondria.
 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.
For instance, MITOCHONDRIA performs following functions:
 - Mitochondria are present in Eukaryotic cells
 - Involved in manufacturing and supply of energy to cell.
 - Thus called Powerhouse of cell.
 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

- Structure of Mitochondria
- They are vesicle rod or filament shaped.
- Q.6 Mitochondria are bounded by two membranes. The outer membrane is smooth. Inner membrane has foldings called Cristae. The inner surface of cristae is highly folded.
- Given: Packets in flavors Apple: Berry: Cherry: Date = 3:6:2:5. Inner membrane has foldings called Cristae. The inner surface of cristae is highly folded.
- Asked: If Apple candies exceed Date candies by 35, how many Berry candies are there?

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

Contains small knob like structures called, F_1 particles. These particles are suspended inside the matrix.

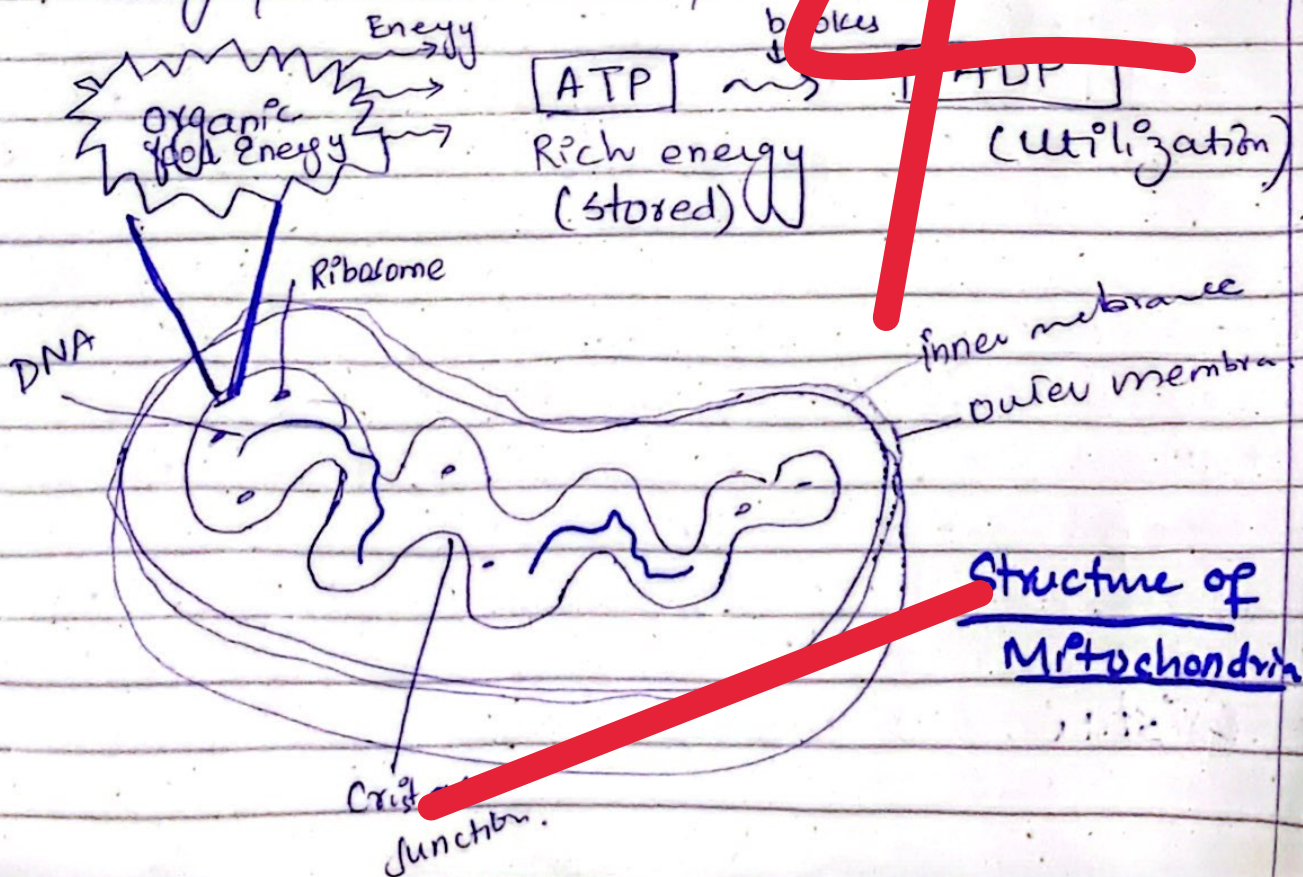
- Chemical Composition of Mitochondria

Mitochondria has membranes composed of lipids and proteins. Its matrix contains large number of enzymes, Coenzymes, inorganic and organic salts.

- Function of Mitochondria

Many metabolic processes take place inside mitochondria since its powerhouse of cell.

Following pattern takes place



Qb. what is doping? types of semiconductors

Doping.

Semiconductors have limited capacity for conduction. To enhance this conduction, small amount of impurities are added called "dopants". This process is called "Doping".

Basing on this process of doping there are two types of semiconductors.

1. Intrinsic Semiconductor

These are pure semiconductors (like Silicon crystal), they have no doping or impurities. Thus their conductivity is low and highly dependent on temperature.

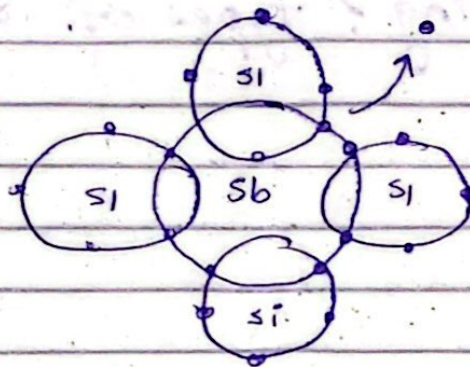
2. Extrinsic Semiconductors

A semiconductor that is doped with impurities to enhance its conductivity is known as extrinsic semiconductor.

There are further two types of extrinsic semiconductors.

(a) N-type are doped with impurities (Phosphorus) having extra valence causing excess of negative charged electrons.

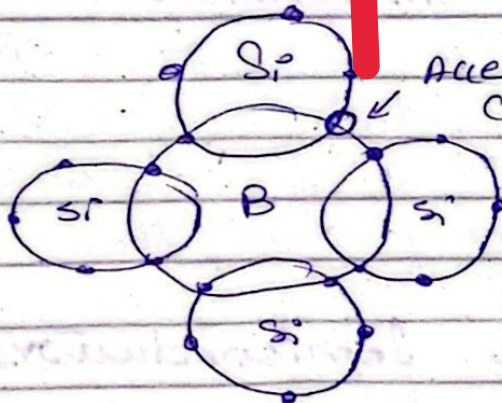
Donor impurity
contributes to free
electron



n-type
Sb - Antimony
Si - silicon

b) P-type

Doped with acceptor impurities having fewer valence electrons (such as Boron). It has positively charged 'holes' where electrons are missing.



Acceptors impurity
creates holes

P-type
Si = silicon
B = Boron

Q(c) Merits and demerits of volcanic eruption?

Volcanic Eruption

volcanic eruption occurs when inside of magma becomes hot and rises to surface. It causes bubble gas to appear eventually it explodes outside surface.

of earth.

Merits of volcanic eruption

(a) Fertile Soil

Since inside of earth bursts out on the surface its rich in nutrients and minerals making soil fertile for agriculture.

(b) Mineral source

Volcanoes bring essential mineral and metals, such as Gold and Copper.

(c) Different types of Rocks

In result of eruption, layers of magma forms on surface of earth creating beautiful landscapes.

(d) Tourism

Beautiful landscapes forming in result of volcanic eruptions can attract a lot of tourism.

Demerits of volcanic Eruption

(a) Loss of Life and Land.

Eruptions can destroy home and causes death of animals and humans.

b) Health Risk

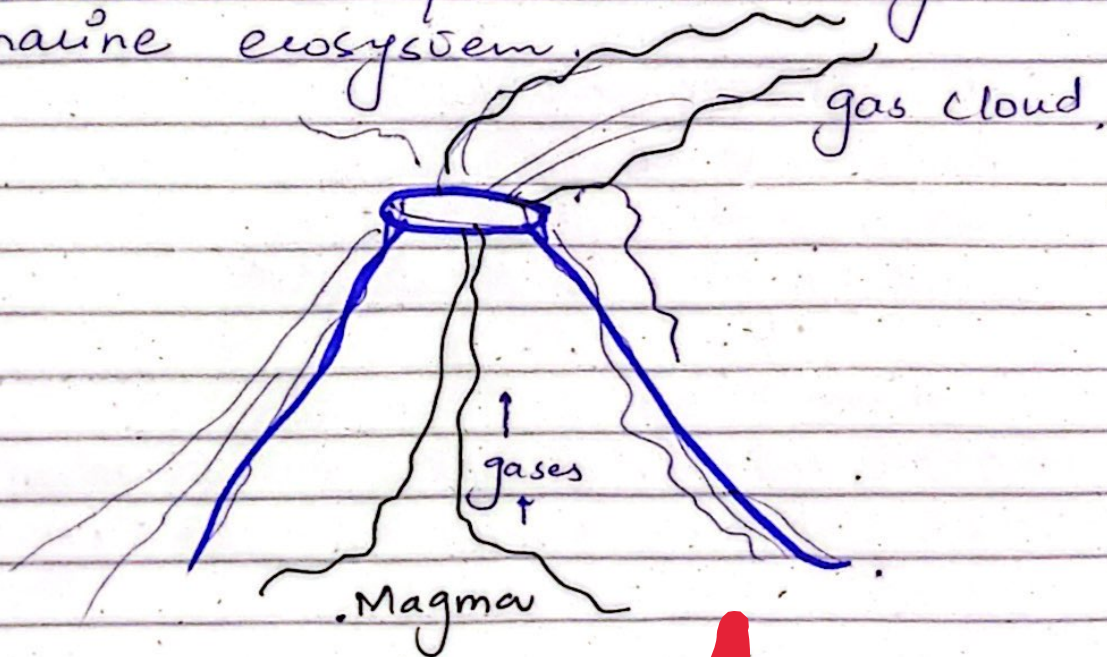
Eruption of gases and other material causes respiratory health risks.

c) Other Disasters

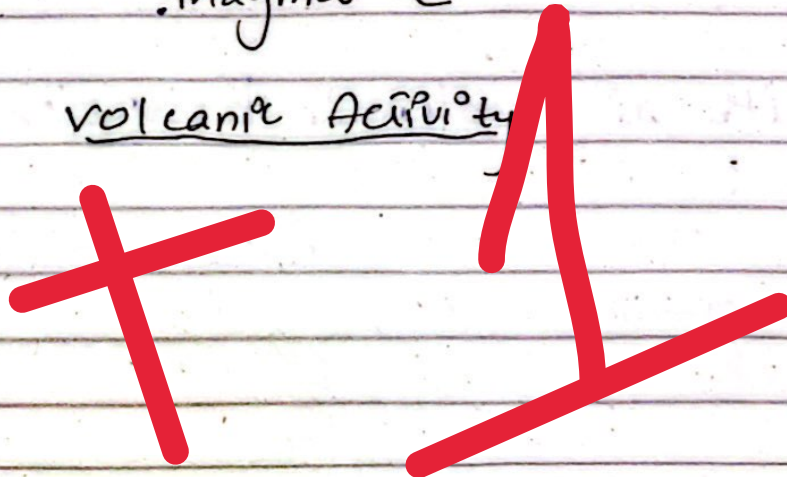
Eruption triggers disasters such as earthquakes and tsunamis.

d) Loss of Biodiversity and marine life

Eruption on earth damages plants and vegetation and eruptions in sea or ocean perains damage to marine ecosystem.



Volcanic Activity



Qd: what is Dengue? - - - - remedies?

→ Dengue

Dengue is mosquito-borne viral disease. It causes severe headache, body pain, muscle and joint pain. ~~There~~

(a) Causative agents

The Dengue-virus, using mosquito as its carrier, causes dengue in humans. It has four distinct but related types (DENV-1, DENV-2, DENV-3, DENV-4).

When carrier mosquito bite, it transfers the virus.

(b) Symptomatology

After 4-10 days of bite - sudden high fever, severe headache, body pain, muscle pain, joint pain, nausea and sometimes rash like symptoms occur.

(c) Remedies.

Best remedy for any disease is "Prevention"

ii) Prevention using mosquito repellents, wearing protective clothing,

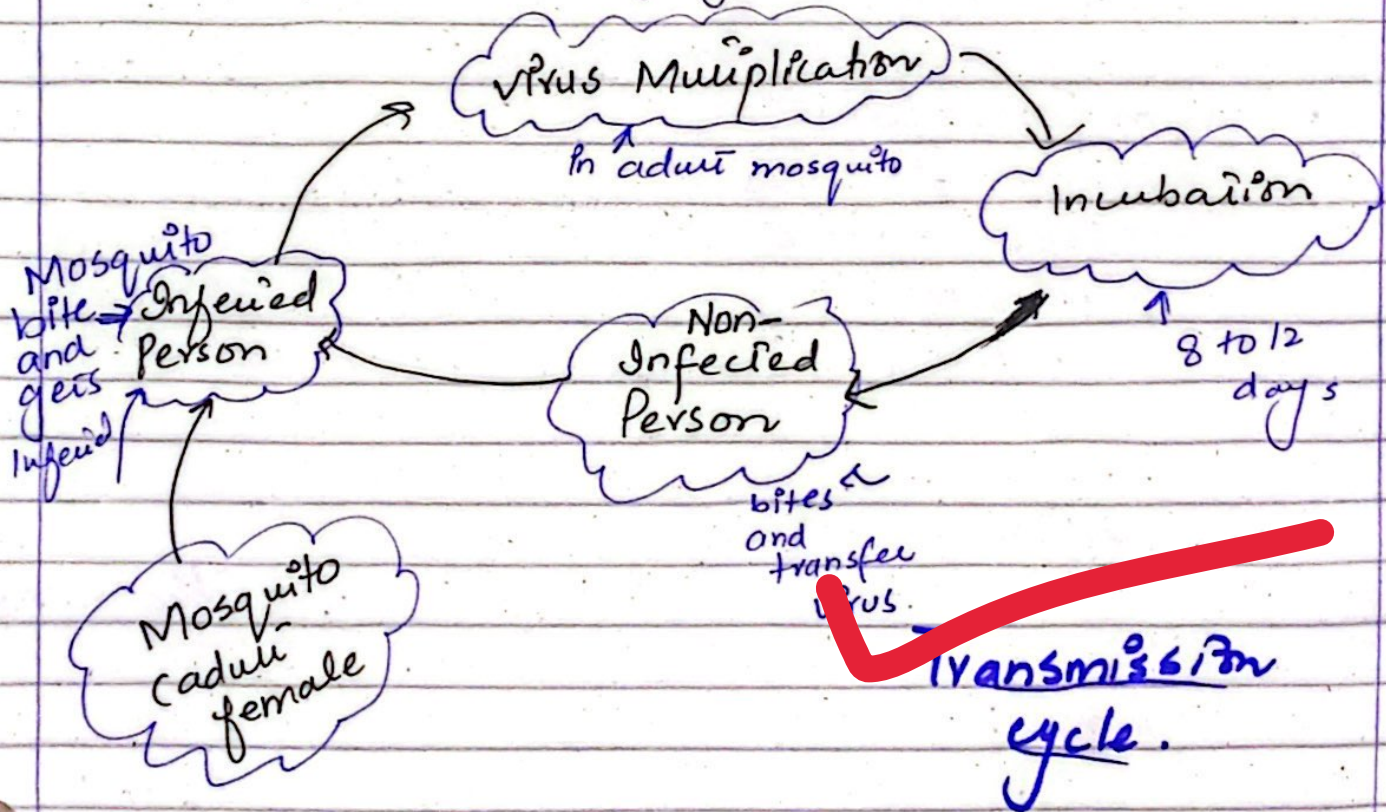
• Take care of water that may become breeding ground, and using nets even while sleeping during mosquito season.

(ii) treatment for mild cases

Plenty of rest,
intake of fluids
and pain relieve medicines

(iii) For Severe cases

Hospitalization, Iv fluids,
and necessary Blood transfusion
(coagulating plasma)



SECTION - II

Q No. 6

(a) A store has packets of candies - - -
- - - - - are there?

Ratio of candies in store

Apple, Berry, cherry, Date $\rightarrow 3:6:2:5$

Step 1

Let, x , number of candies for each flavour.

Number of Apple candies $= 3x$

Number of Berry candies $= 6x$

Number of Cherry candies $= 2x$

Number of Date candies $= 5x$

Step 2

Apple candies exceeds date candies by "35"

Equation

$$(3x) - (5x) = -35$$

$$-2x = -35$$

$$x = \frac{-35}{-2} = 17.5$$

Step 3

Number of berry candies $= 6x = 6(17.5)$
 $= 105$

$= 105$ Berry candies

(b) A camera Priced at ^{200\$ gets.} 25% off - - -

$$\text{Camera Price} = 200\$$$

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

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

Step 1

$$\text{Discount amount} = 25\% = 0.25$$

$$\text{Discounted Price} = 200 \times 0.25 \\ = 50$$

$$\text{Paid. Price} = 200 - 50 \\ = 150$$

Step 2

$$\text{Tax} = 6\% = 0.06$$

$$= 150 \times 0.06$$

$$= 9$$

Step 3

$$\text{Final Price (after discount and tax)}$$

$$= 150 + 9$$

$$= 159$$

= 159\$ was paid. for camera.

(c) A bicycle covers 36 km ---

Bicycle covers = 36 km
Speed = 18 km/hr
Time = 1 pm.

Step 1

Time taken for Journey

$$\text{Time} = \frac{\text{Distance}}{\text{Speed}}$$
$$= \frac{36 \text{ km}}{18 \text{ km/hr}} = 2 \text{ hr}$$

Step 2

Starting time = 1 pm
time taken = 2 hr

Bicycle reached = 1 pm + 2 hr = 3 pm.

= Bicycle reaches at its destination
at 3 pm

(d) unscramble the words

(i) Statistics

(ii) LEMBAR 4