

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 analytical ability questions in words. For a 5-mark part, show all steps and provide clear explanations.

Good luck for CSS 2026 — you're going to ace it, in sha Allah! ✨

Date: _____

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FUNCTIONS OF MITOCHONDRIA

1- It is a site for various metabolic reactions vital for life.

2- It provides energy to the cell and is known as power house of cell.

3- It increases the surface area for various reactions of cell.

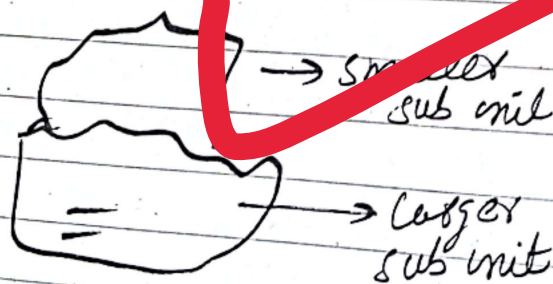
STRUCTURE OF RIBOSOME

^{Ribosomes}
or small circular structures present in cell. Structurally, they are made of 2 sub-unit.

* Larger sub unit

* Smaller sub unit

Both the subunit are attached with each other for process of protein synthesis.



Ribosomes

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(3)

FUNCTIONS OF RIBOSOME

Ribosomes play vital functions in human body as;

- 1- They are main cell organelles for protein synthesis.
- 2- They attach and regulate the functioning of RNA.
- 3- They provide the site for attachment of proteins in protein synthesis.

MITOCHONDRIA AS POWER HOUSE OF CELL

Mitochondria is called as power house of cell. This is because it is main organelle responsible for production of energy. The ATP, which is main energy currency of the body is mainly synthesised in mitochondria, hence making it power house of cell.

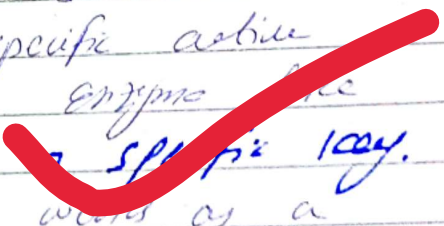
PART B

ENZYMES

Enzyme are biological catalysts which speed up the reactions occurring in living cells. These are proteins in nature and increase the rate of chemical reaction millions of times.

LOCK AND KEY MODEL - AND MECHANISM OF ENZYME ACTION

One model explaining the mechanism of enzyme action is lock and key model. According to this model's

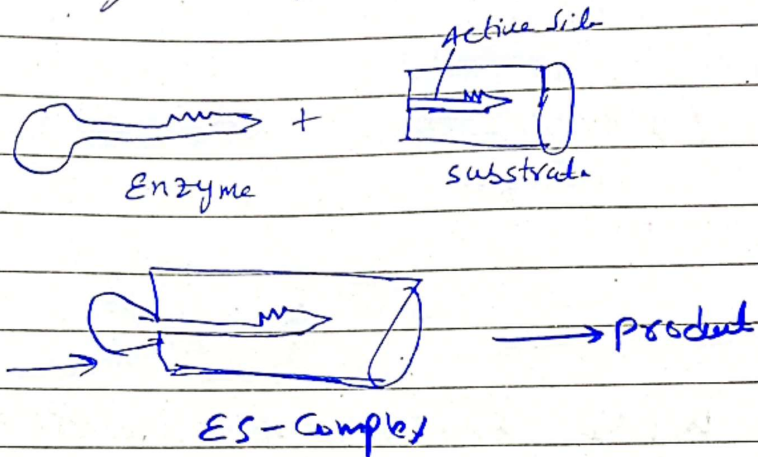
- 1- Enzymes has an active site with which a substrate (substance on which enzyme works) attach.
- 2- Active site of enzyme is rigid and fix, and is specific for specific enzyme.
- 3- Only specific substrate can attach to specific active site of an enzyme.  So active site works as a lock with which substrate (key) attaches.

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When 4- When a substrate attaches with active site, an enzyme substrate complex is formed.

5- ~~When~~ ~~on enzyme~~ ~~substrate~~ ~~complex~~ ~~is~~ ~~formed~~ ~~the~~ Enzyme substrate complex (ES) ultimately changes into product.



LOCK AND KEY MODEL

PART C

RENEWABLE ENERGY RESOURCE

The energy resources which can be recycled easily within time frame without loss are called as renewable energy resources.

EXAMPLES:

- + Solar Energy
- + Wind Energy
- + Hydel Energy

NON RENEWABLE ENERGY RESOURCES

Energy resources which cannot be reused and vanishes, having limited availability are called as non renewable energy resources.

EXAMPLES:

- + Coal
- + Petroleum
- + Natural Gas

WIND ENERGY AS SUSTAINABLE SOURCE

Wind energy is a form of renewable energy in which wind is used to run the turbine and produce electricity. It is a sustainable energy source as:

1- It is renewable form of energy so it cannot be depleted.

It is a form of energy having no pollution associated with it.

It is less costly, making it sustainable.

Date: _____

⑦

part d

DENGUE FEVER

Dengue fever is a viral disease associated with high fever, joint pain and hemorrhagic fever.

VECTOR

Mosquitoes belonging to Aedes family are mainly associated with dengue fever. Female mosquitoes bite and spread the disease.

SYMPTOMS

- High Fever
- Joint pain
- Muscle pain
- Eyes pain
- Headache

PREVENTIVE MEASURES

- 1- Controlling breeding places of Aedes mosquitoes
- 2- Wearing full sleeves cloth.
- 3- Regular mosquito sprays

QUESTION NO 04

PART A

ROCK CYCLE

It is a process in which various forms of rocks are interconverted to one another.

a) Igneous to Sedimentary

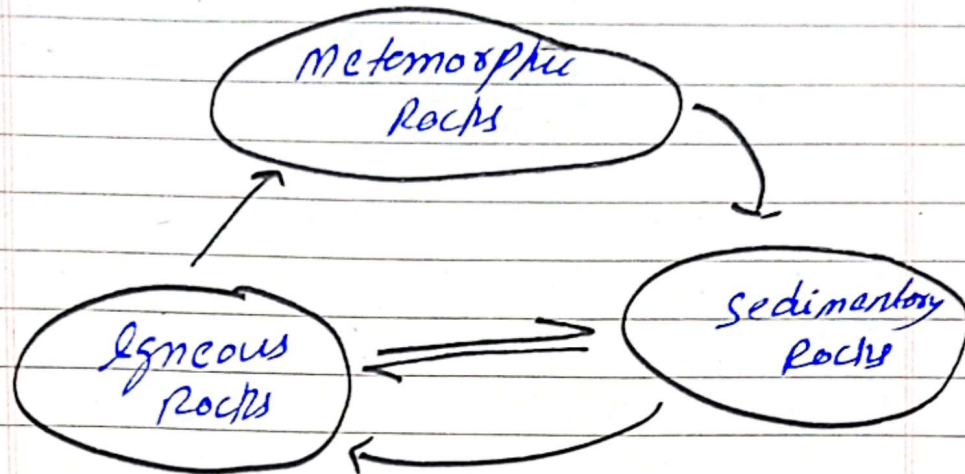
Igneous rocks, through pressure and mechanical strength are converted to Sedimentary rocks.

b) Sedimentary to Metamorphic

When Sedimentary rocks are exposed to conditions of weathering they are converted to Metamorphic rocks.

c) METAMORPHIC to IGNEOUS

When metamorphic rocks undergo sudden changes as a consequence of disasters, they change to metamorphic rocks.



DIFFERENCE BETWEEN IGNEOUS SEDIMENTARY AND METAMORPHIC ROCKS

* ~~Sed~~ Igneous rocks are formed when lava from underground rise and melting lava cools down giving rise to igneous rocks.

+ When igneous rocks, due to various factors separate their parts, giving rise to sediments, these sediments are called as sedimentary rocks.

+ When igneous or sedimentary rocks undergo temperature or biological and chemical changes, they are changed and called as metamorphic rocks.

PART 2

ACID RAIN

The rain having pH less than 5.6 is called as acid rain.

EXPLANATION

Due to presence of carbon dioxide in atmosphere, the carbonic acid (H_2CO_3) is formed ~~but~~ resulting in pH 5.6. But carbonic acid is a weak acid. When Nitrogen and Sulphur oxides are present, they cause formation of H_2SO_4 and Nitric acid which are strong acid. These acids lower the pH of rain lower than 5.6 and rain is called as acid rain.

FORMATION OF ACID RAIN

1- Burning of coal in power plants and industries leads to production of SO_2 as



These oxides of Sulphur react with water to produce Sulphuric acid.

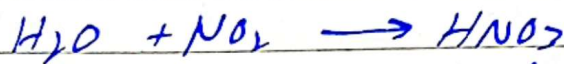
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(Sulphuric Acid)

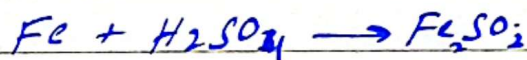
2- Oxides of Nitrogen from automobiles and industries lead to formation of Nitric acid as



(Nitric Acid)

IMPACTS:

1- Acid rain damages the metals as



2- Acid rain damages the marbles as



3- It destroys the plants

4- It affects the aquatic life and causes death of aquatic life

PART I

REMOTE SENSING AND ITS ROLE IN ENVIRONMENTAL AND DISASTER MANAGEMENT

Remote sensing refers to a technology in which images of surfaces are obtained without ~~going~~ physically going to the surface. It has numerous applications in environmental and disaster management as

1- It helps in analyzing the surface where it is not possible to physically go

2- Surface analysis provides insight of possible natural disasters which can be then predicted

3- It helps in efficient data analysis of disaster hit towns and villages.

SOLID WASTE MANAGEMENT

Solid waste management refers to proper disposal of solid or semi solid waste to avoid the pollution and possible negative impacts resulting ~~in solid~~ due to this waste.

METHODS OF SOLID WASTE

1: OPEN DUMPING

It refers to dumping the solid waste in open dumps.

2- INCINERATION

It refers to burning the solid waste under highly controlled conditions.

3- LANDFILL

Landfills are used to dump the solid wastes in landfills.

4- Composting

It refers to converting the solid waste to compost, which is then used as fertilizer.

ENVIRONMENTAL HAZARDS WITH IMPROPER WASTE DISPOSAL

1- DISEASES

Improper disposal can lead to spread of various diseases.

2- LAND POLLUTION

Improper disposal of solid waste leads to land pollution.

3- HAZARDS FROM HOSPITAL WASTE

Life threatening hazards can occur through improper disposal of wastes.

4- AIR POLLUTION

Incineration leads to air pollution in the urban cities.

5- DESTROYS AESTHETIC VIEW

The aesthetic views of cities are destroyed due to improper disposal of waste.

QUESTION NO 07

PART 1a]

Total people = 100

Neither watch cricket or Hockey = 20

So Remainin = 20 = 0

Watching cricket = 65

Watching Hockey = 40

Among 80, 65 watch cricket so

remaining = 80 - 65 = 15

Among 80, 40 watch Hockey so

80 - 40 = 40

Difference = 15 = 25

So 25 students watch both.

PART C

Solution

A ————— B
400

Speed of A = 60 km/hr

Speed of B = 40 km/hr

After Hours	Train from A	Train from B
01	60 -	40
02	120	80
03	180	120
04	240	160

$$240 + 160 = 400$$

ate:

So they meet after
hours i.e. 12 PM

part D

solution

let age of son =

let age of father = y
 $x + y = 75$ $\rightarrow$ ①

10 years ago,

Father's age = $y - 10$

Son's age = $x - 10$

According to Question

$$y - 10 = 4(x - 10)$$

$$y - 10 = 4x - 40$$

To find y ,

$$y = 4x - 40 + 10$$

$$y = 4x - 30 \rightarrow$$
 ②

substitute y in eq ①

$$x + 4x - 30 = 75$$

$$5x - 30 = 75$$

$$5x = 75 + 30$$

$$5x = 105$$

$$x = 105 / 5$$

$$x = 21$$

Age of son = 21

Age of Father

$$= 75 - 21$$

$$= 54$$

$$x + y = 75$$

$$21 + y = 75$$

$$y = 75 - 21$$

$$y = 54$$

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QUESTION NO 10

PART (a)

SOLUTION

Given pattern = ROAD = UQDNG

+3
+2
+3
+3

LAKE = OQNH

PART B

SOLUTION

According to Question

Men — sister — Husband
 |
 Son
 |
 Hers son

So women is daughter in law
of men's sister.

PART C

a) 4, 12, 6, 18, 9, 27, 13.5

$$\begin{array}{ccccccc} 1 & \nearrow & 1 & \nearrow & 1 & \nearrow & 1 \\ \times 3 & & \div 2 & & \times 3 & & \div 2 \\ 3 & & 2 & & 3 & & 2 \end{array}$$

EXPLANATION: Each digit is multiplied by 3, which becomes next digit, next is divided by 2 which becomes next digit.

$$\times 3 \text{ --- } \div 2 \text{ ---}$$

b) 1, 2, 6, 24, no, 720

$$\begin{array}{cccccc} \times & \times & \times & \times & \times & \nearrow \\ 2 & 3 & 4 & 5 & 6 & \end{array}$$

Explain in words

Each answer is multiplied by a consecutive integer.

PART D

According to Question

P

T

S

Q

R

→ S is third tallest

→ Range = 180 - 150 = 30