

Dos and Don'ts for General Science & Ability Paper

Hi there, you've done well. Know that acquiring knowledge is one thing and reproducing it in paper according to what's asked is another. There are a few things I would like to highlight.

1. A 5 marks part requires at least 2 and at max 3 sides of a paper. Know that there can be two or three parts of a question and their

marks are divided accordingly. So, address all of them in a just manner.

2. Focus on time management. You get 35 minutes to solve one question and about 8

minutes per 5 mark part. Manage your time accordingly.

3. You need to understand that your paper is supposed to look more scientific than

theoretical. So, add flowcharts and diagrams where required.

4. Your handwriting and neatness can be really impactful. Avoid cutting and overwriting.

5. Focus on your spellings and your grammar.

Here, in GSA there's no deduction in marks but your expression will definitely create an impact.

6. In ability portion, give explanation for analytical ability question in words. You need to understand that a 5 mark part requires all steps written and explained.

Good luck for CSS 2025. You're gonna rock in sha Allah. :)

(PART-II)
(SECTION-I)

✱ Question #2 ✱

✱ A ✱

Definition of Dengue:-

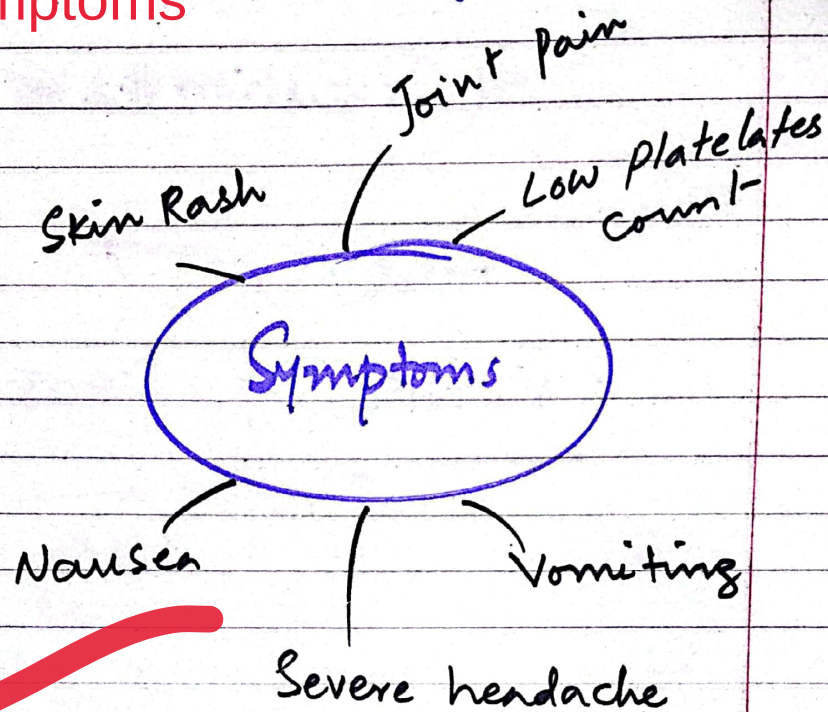
It is a viral infection transmitted by mosquitoes. It causes high fever, severe headache, and joints pain.

Causative Agents of Dengue :-

Dengue is caused by the dengue virus known as (DENV). It has four other types :-

- DENV-1
- DENV-2
- DENV-3
- DENV-4

Explain early critical and recovery symptoms



(B)

⇒ Dark Matter :-

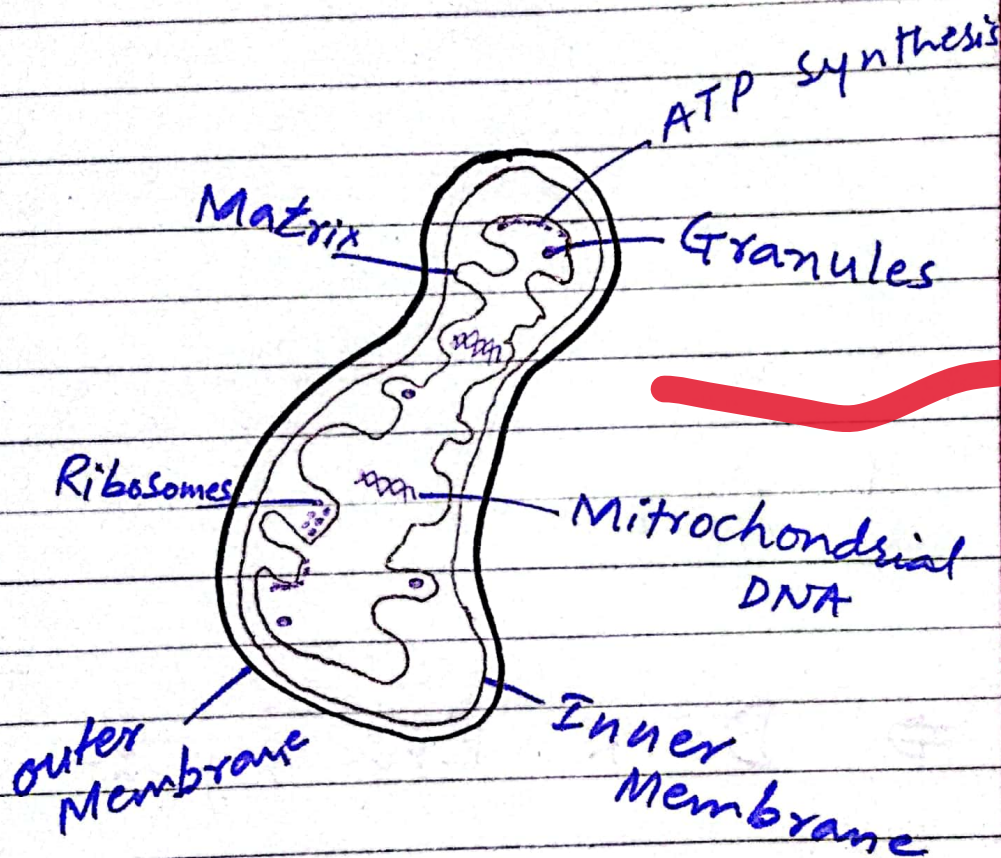
It is one of the mysterious components of the universe. It is an invisible substance that does not emit light or energy. However, its gravitational effects help in holding galaxies together.

⇒ Dark Energy :-

It is a force driving the accelerated expansion of the universe.

(c)

The Structure of Mitochondria:-



(C)

Functions of Mitochondria :-

- i. Mitochondria are the power houses of the cells.
- ii. They generate energy in the form of ATP.
- iii. They also help in regulation of cell metabolism.
- iv. Calcium storage

How Mitochondria is powerhouse?

Mitochondria are called the powerhouse of the cell because they produce ATP. However, ATP is known as cell's main energy currency. This energy fuels various cellular activities.

(D)

What are covalent Bonds ?

Define properly Covalent bonds are chemical bonds formed when two atoms share pairs of electrons to achieve stability. This type of bonding typically occurs between nonmetals.

Example, H_2O and O_2

→ Types of Covalent Bonds and Their Structures :-

i. Single Covalent Bond:

It involves one pair of shared electrons between two atoms.

Structure Example, $H-H$

P.T.O

ii. Double Covalent Bond:

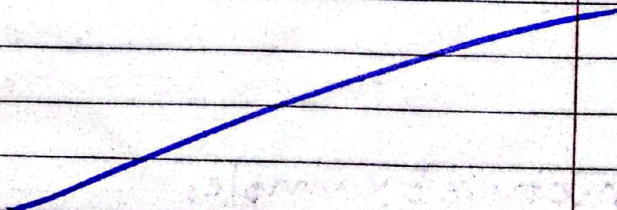
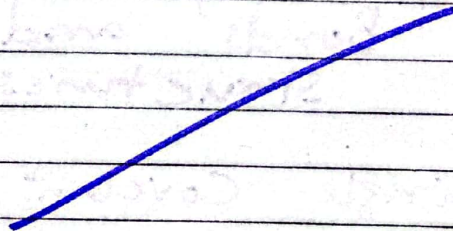
It involves two pairs of shared electrons.

Example, $O=O$

iii. Triple Covalent Bond:

It involves three pairs of shared electrons.

Example, $N \equiv N$



* Question #04 *

(A)

Noise Pollution :-

Noise pollution is the excessive level of noise in the environment. It is more often caused by traffic, industrial activities, construction and loud music.

Noise Pollution Effects:-

- i. Hearing loss
- ii. Sleep Disturbance
- iii. Stress and Anxiety
- iv. Reduced Quality life
- *
v. Negative Impacts on wildlife

Generic solutions and explanation

WAY Forward to Curb Noise Pollution :-

To curb noise several strategies can be implemented that are outlined below:

- i. Regulation of Noise levels
- ii. Promoting Quiet Zones
- iii. Use of Technology
- iv. Public Awareness
- v. Use of sound-absorbing materials
- vi. Designing cities with noise barriers.

(B)

Importance of Fiber in Diet :-

Fiber is an essential component of healthy diet. It provides several important benefits:

- i. Fiber aids in promoting overall digestive health.
- ii. High-fiber foods control appetite and reduce overall calorie intake.
- iii. Blood Sugar Control
- iv. Fiber can lower cholesterol levels, which is better for Heart Health.
- v. Nutrient Absorption
- vi. Fiber-rich foods often contain important vitamins and minerals.

How would be a Platter of food considered balanced?

A balanced food platter includes a variety of foods groups in appropriate manner. It includes:

Pie chart??
Percentage
proportion??

i. At least half of the platter should consist of colourful fruits, and vegetables.

ii. Grains such as brown rice for carbohydrates and fiber.

iii. Incorporation of chicken and fish for protein requirements.

iv. Addition Nuts, seeds and olive oil for healthy fats

v. Include serving of Dairy for calcium and Vitamin D.

(C)

Drinking Water Quality :-

Drinking water quality refers to the chemical, physical, and biological characteristics of water. It determines its suitability for human consumption. Key components are outlined below:

- i. Drinking water should be free from micro-organisms, like Bacteria, Viruses, etcetera.
- ii. Water should not contain harmful levels of chemicals. Like, Pesticides, Herbicides, etc.
- iii. Clear, colorless water with low turbidity is ideal for consumption.

Explain properly

Standards of Drinking Water:-

The key standards include:

- i. Ideal drinking water pH is 6.5 - 8.5
- ii. PH of pure water - 7
- iii. pH level less than 6 is contaminated water.
- iv. pH level greater than 8.5 is also not suitable for consumption.

SECTION-II

Question #6

(A)

Data:-

Given series = 9, 8, 10, K, 12

Arithmetic Mean = 15

Required:-

Determine the value of K?

Solution:

Since,

$$15 = 9, 8, 10, K, 12$$

By using Arithmetic mean formula,

$$15 = \frac{9 + 8 + 10 + K + 12}{5}$$

$$\Rightarrow 15 \times 5 = 9 + 8 + 10 + K + 12$$

$$75 = 39 + K$$

$$75 - 39 = K$$

$$\boxed{36 = K}$$

Hence the required value.

B(C)

Data:-

Radius of football = r
 $= 12 \text{ cm}$

Required:-

Find the volume of
Football ?

Solution:-

Since, the football
is spherical shape.

Then,

The volume of sphere =

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

Now football volume is,

$$V = \frac{4}{3} \left(\frac{22}{7} \right) (12)^3 \quad \because \pi = \frac{22}{7}$$

$$= \frac{4}{3} \left(\frac{22}{7} \right) (1728)$$

$$V = 7241.1 \text{ cm}^3$$

Hence the required
Answer.

(D)

Data:-

Series $-10, -8, +6, 40, 102, ?$

Required :-

Required missing
number ?

Solution:-

$-10, -8, +6, 40, 102, 200$

Answer

(Question #08)

(C)

Data :-

$$A = \{10, 11, 12, 13, 15\}$$

$$B = \{10, 12, 14\}$$

$$U = \{10, 11, 12, 13, 14, 15, 16, 18\}$$

Required :-

$$(A \cup B)' = A' \cap B'$$

Solution :-

Since, According to De Morgan's first law

$$(A \cup B)' = A' \cap B'$$

Now,

$$\text{T. L. H. S } (A \cup B)'$$

$$(A \cup B)' = U - (A \cup B)$$

$$= \{10, 11, 12, 13, 14, 15, 16, 18\} - \{10, 11, 12, 13, 15\}$$

$$= \{14, 16, 18\}$$

$$\text{Now T. R. H. S } A' \cap B'$$

$$A' = U - A$$

$$= \{10, 11, 12, 13, 14, 15, 16, 18\} - \{10, 11, 12, 13, 15\}$$

$$= \{14, 16, 18\}$$

$$B' = U - B$$

$$= \{10, 11, 12, 13, 14, 15, 16, 18\} - \{10, 12, 14\}$$

$$= \{11, 13, 15, 16, 18\}$$

Now,

$$A' \cap B' = \{14, 16, 18\} \cap \{11, 13, 15, 16, 18\}$$

$$= \{16, 18\}$$

$$\therefore \text{L.H.S} = \text{R.H.S}$$

$$\therefore (A \cup B)' = A' \cap B'$$

Hence Proved

(A)

Data:

Brian formula = $\pounds 20 + 4n$

House windows = 7

n = represents windows

Required:

How much Brian charge?

Solution!

Since
Brian charging formula,
$$= 20\$ + 4n$$
$$= 520 + 4(7) \quad \because n=7$$
$$= \boxed{20 + 28}$$

Since, each pound in
PKR = 350 approx

Therefore

Brian charging = $(350)(20) + 28$
 $+ 20 + 28$
 $= \boxed{7028 \text{ PKR}}$

Required Answer