

Dengue

Dos and Don'ts for General Science & Ability Paper

Dengue is a common viral infection

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.

Dengue is spread by infected mosquitoes most commonly the species aegypti mosquito. The infected mosquito bites another human, and the cycle continues.

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. Symptoms usually begin four to six days after infection and last for up to 10 days, may include:

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. :)

b Dark matter & Dark Energy:-

Dark matter:- Is an Unseen form of matter that does not emit, absorb or reflect light, making it invisible and detectable only through its gravitational effect. It makes up about 27% of the universe. Evidence for dark matter comes from various astronomical observations, such as the rotation curves of galaxies, gravitational lensing, and cosmic microwave background. It plays a crucial role in the formation and structure of galaxies.

(ii) Dark Energy:- Dark Energy is a mysterious form of energy that permeates space and is driving accelerated expansion of the universe. It makes up about 68% of the universe's total energy density. The discovery of dark energy arose from observation of distant supernova, which indicate that the universe is not just expanding but doing so at an increasing rate.

Explain
properly

c Mitochondria :-

They are known as power house of the cell. Their number is different in different cells, depending upon the nature of the cell. They have two membranes outer & inner. Inner membrane forms finger like folding called cristae. Inside the mitochondria there is present liquid material called matrix. They have their own DNA. They are self replacing bodies. They synthesize ATP (Adenosine tri phosphate) which is used to provide energy in cell.

Explain properly

d Covalent bond:

Bond in which one or more pairs of electrons are shared by two atoms. In contrast to the transfer of electrons in ionic bonds, such bonds lead to stable molecules if they share electrons in such a way as to create a noble gas configuration for each atom. Hydrogen gas forms the simplest covalent bond in the diatomic hydrogen molecules. The halogens such as chlorine also exist as diatomic gases, by forming covalent bonds. The nitrogen & oxygen which makes up the bulk

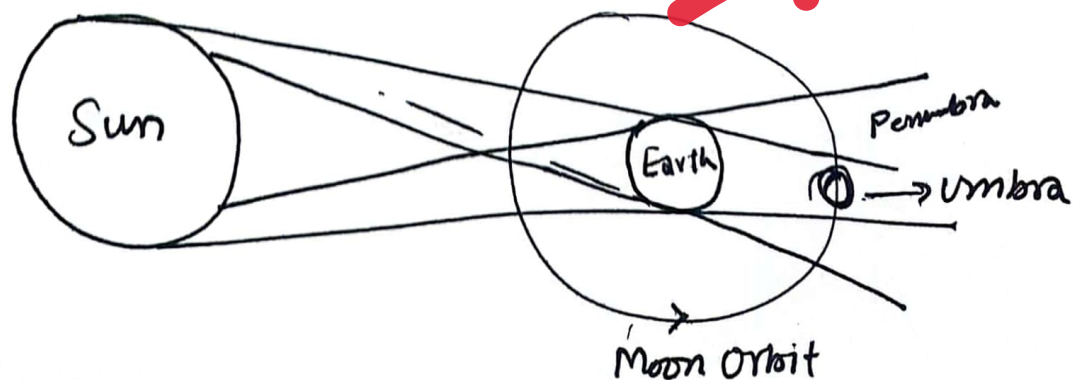
Elaborating structures

Q3

a. Lunar Eclips

An eclips is an astronomical event where one celestial body partially or totally cover another celestial object. This happen when the eclipsing body comes between the observer and the eclipsed object. Lunar Eclips occurs when the earth passes between the sun & the moon, causing the earth shadow to fall on the moon. This can result three types of lunar eclips

- (i) Total Lunar Eclips:- The entire moon passes through the earth Umbra.
- (ii) Partial Lunar Eclips:- Only a portion of the moon enters the Earth Umbra.
- (iii) Pen Umbraal Lunar Eclips:- The moon passes through the earth penumbral shadow, causing a subtle shading that is often hard to observe



Add proper explanations

Enzymes:-

Enzymes are biological catalyst which are used to increase the rate of a biochemical reaction and are specific for each reaction.

Function :- Enzyme are protein in nature. But some have a non-protein part called co-factor. Co-factor is essential for the functioning of particular enzyme. Co-factor are like Magnesium, Iron, Zinc, Copper ion etc. If co-factor is loosely attached to the protein part, then it is called co-enzyme. Enzyme without factor is called a proenzyme.



Give functions alongside examples

Electromagnetic Radiation

It is the form of energy which surround us in the environment, according to different wavelength and frequency this spectrum of energy is divided into different forms. First on the basis of ionizing & non-ionizing characteristics, these radiation are broadly divided into two type as Ionizing radiations and non-ionizing radiation. Usually, X Ray & Gamma Rays are ionizing radiation due to their high energy & high frequency. While all rest are non-ionizing radiations. Radiation consist of self-sustaining electric & magnetic field that are perpendicular to each other and also to the propagation.

Spectrum? Proper explanation is required

d

Earthquake and volcanic eruption are interconnected through the movement of tectonic plates. Shift, they can cause earthquakes. These shifts can also create pressure and fracture in the earth's crust, allowing magma to rise, leading to volcanic eruption. In many cases an earthquake can trigger an eruption by altering the pressure and pathway within a volcano. Thus both phenomena are linked to the dynamics of the Earth's interior and plate tectonic.

Diagram??

?

Q6

(a)

$$\text{Mean} = \frac{\text{Sum of all value}}{\text{Number of value}}$$

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

$$15 = \frac{39+K}{5}$$

multiply both side by 5

$$75 = 39 + K$$

$$K = 75 - 39$$

$$K = 36 \quad \text{Ans}$$

(b)

Sugar solution & colored water be $4x$ & $3x$ respectively, where x is a common multiplier.

After adding 10 liters of C-Water.

Sugar Sol $4x$

Colored Water $3x + 10$

The new Ratio is $4:5$

$$\frac{4x}{3x+10} = \frac{4}{5}$$

Cross multiplication $4(3x+10) = 5 \times 4x$

Thus simplify to:

$$12x + 40 = 20x$$

Isolate x :-

$$40 = 20x - 12x$$

$$40 = 8x$$

$$x = 5$$

Now put in sugar solution

$$\text{sugar solution} = 4x$$

$$= 4(5)$$

$$= 20 \text{ liter Ans}$$

③

Formula for the volume of sphere:

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

$$r = 12$$

$$V = \frac{4}{3} \pi (12)^3$$

$$V = \frac{4}{3} \pi (1728)$$

$$V = 2304 \pi \text{ cm}^3$$

$$V = 2304(3.14)$$

$$V = 7238.08 \text{ cm}^3 \text{ Ans}$$

$$\begin{array}{r} \frac{4}{3} \times 1728 \\ \hline 4 \times 1728 \\ 3 \end{array} = 2304$$

$$\pi = 3.14$$

d

Series :

Diff =

-10	-8	6	40	102
2	14	34	62	
12	20	28		
8	8			

Arrows indicate the sequence of differences: from -10 to -8, -8 to 6, 6 to 40, 40 to 102, and then from 2 to 14, 14 to 34, 34 to 62, 12 to 20, 20 to 28, and finally 8 to 8.

New Last Digit upward

~~$8 + 28 = 36$~~

~~$36 + 62 = 98$~~

~~$98 + 102 = 200$~~

Next Digit is 200 An

QNO7

(a)

$$20\% \text{ of } n = y$$

$$y = 0.2n$$

y% of 20?

$$\frac{y}{100} \times 20$$

$$\boxed{y = 0.2n}$$

$$= \frac{0.2n \times 20}{100}$$

$$= \frac{4n}{100}$$

$$= 0.04n$$

so y% of 20 in term of n

$$= 0.04n. \text{ Ans}$$

(b)

(i) $P \neq Q$

$$\frac{P+Q}{2} = 5050$$
$$= P+Q = 10100 \quad \text{--- (i)}$$

(ii) $Q \neq R$

$$\frac{Q+R}{2} = 6250$$
$$Q+R = 12500 \quad \text{--- (ii)}$$

(iii) $P \neq R$

$$\frac{P+R}{2} = 5200$$
$$P+R = 10400 \quad \text{--- (iii)}$$

Express r eq (ii)

$$R = 12500 - Q \quad \text{--- (iv)}$$

eq (iv) into (iii)

$$P + (12500 - Q) = 10400$$
$$P + 12500 - Q = 10400$$
$$P - Q = 10400 - 12500$$
$$P - Q = -2100$$
$$P = Q - 2100 \quad \text{--- (v)}$$

eq (v) into (i)

$$(Q - 2100) + Q = 10100$$
$$2Q - 2100 = 10100$$
$$2Q = 10100 + 2100$$
$$2Q = 12200$$
$$Q = 6100$$

Q into (v)

$$P = 6100 - 2100 = \boxed{4000} \text{ Ans}$$

(d)

Let Jamie current age be x

Jamie's Dad current age be y

$$y = 4x \quad (4 \text{ times older})$$

In 14 years

$$y + 14 = 2(x + 14)$$

$$4x + 14 = 2x + 28$$

$$4x - 2x = 28 - 14$$

$$2x = 14$$

$$\boxed{x = 7}$$

$$y = 4x$$

$$y = 4(7)$$

$$y = 28$$

Sum of their ages

$$= x + y$$

$$= 7 + 28$$

$$= 35 \text{ years} \quad \text{Ans}$$