

Q: 2 (9)

## What is dengue?

Dengue is a viral disease that spreads from mosquitoes to people. Dengue refers to break-bone fever. It is more common in tropical and subtropical regions.

### → Causative agents:

There are four main causative agents of dengue.

→ dengue is caused by any one of four types of dengue viruses.

It is spread through mosquito bites. When an infected mosquito bites a person, it transfers dengue virus to human blood and causes an infection.

### Symptoms:

→ Dengue fever causes a high fever ranging from 104°F. It also shows other symptoms like

(1) headache

Muscle, bone & Joint Pain



- (3) Vomiting
  - (4) Rash
  - (5) Pain behind the eyes
- Dengue shock syndrome is a severe condition in which some time internal bleeding and organ failure occurs which lead to death.

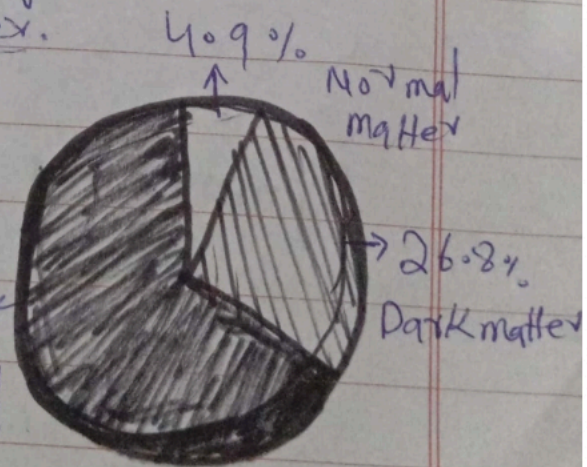
(b)

## Dark Matter and Dark energy

→ Most of the Universe made up of dark energy, a mysterious force that drives the accelerating expansion of the universe.

→ The next largest part is dark matter.

Which interact with the rest of the universe only through Dark energy its gravity.



Normal matter including all the visible stars, planets



and galaxies, makes up less than 5% of the total mass of the universe.

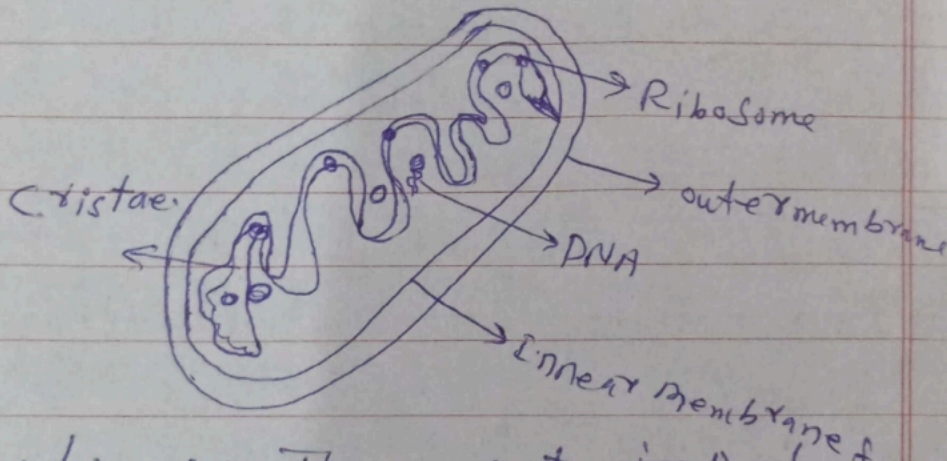
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## Structure of Mitochondria.

A mitochondria is an organelle found in Eukaryotic cells.

have shoe like shape and double membrane bounded

It generate ATP for cell functions.

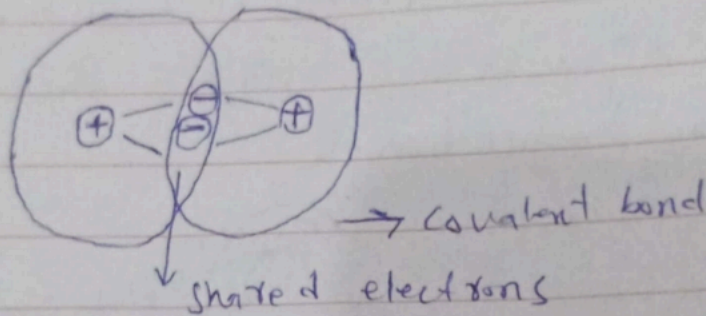


Functions: The most important function is to produce ATP, energy for cell. It regulate cellular metabolism that's why it is called power house of a cell.

## (d) Covalent bond and its Types.

A covalent bond is formed by the equal sharing of electrons from both atoms.

The pair of electron is called shared-pair of electrons.



Types :

Types depending upon the number of shared electron pairs.

### 1) Single bonds

When only one pair of electrons is shared between the two atoms.

example: HCl molecule has one hydrogen atom and one chlorine atom.

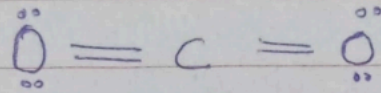




### ② Double bond.

When two pairs of electrons are shared between the two atoms. show with (=)

Example:  $\text{CO}_2$  molecule has double covalent bond

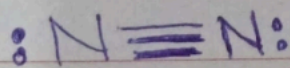


### ③ Triple Bond:

When three pairs of electrons are shared between two atoms. show with ( $\equiv$ )

example:

Nitrogen molecule has triple bond.



## Paper # GSA

Section # 2

Q.No. 8

(9)

$$\text{Charge} = £20 + 4n$$

where  $n = 7$

$$\text{Charge} = £20 + 4(7)$$

$$" = £20 + 28$$

$$" = £20 + 28$$

$$\text{Charge} = £48$$

(10)

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

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

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

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

As we know

Complement =  $U - \text{given set}$

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

$$A \cup B = \{10, 11, 12, 13, 15\} \cup \{10, 12, 14\}$$

$$A \cup B = \{10, 11, 12, 13, 14, 15\}$$



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

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

$$(A \cup B)' = \{16, 18\}$$

$$A' \cap B' = ?$$

$$A' = U - A$$

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

$$A' = \{14, 15, 16, 18\}$$

$$B' = U - B$$

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

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

Now

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

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

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

(d) Find No of Triangle

There are 12 Triangle in figure  
for square shape we multiply

with then

$$12 \times 2$$

$$24$$

There are 24 Triangles

Q: 6 part (a)

find  $k = ?$

$$9, 8, 10, k, 12$$

$\xrightarrow{+1}$     $\xrightarrow{+2}$     $\xrightarrow{-1}$

mean is = 15

$$\text{Mean} = \frac{\text{sum of all the observations}}{\text{total no of observations}}$$

Total no = 5

~~$$\frac{15}{T} = \frac{\text{sum of obs}}{5}$$~~

Sum of observation =  $15 \times 5$

// = 75

If All the <sup>sum</sup> observation is 75

Then  $k = \boxed{36}$



(b)

Coloured water ratio = 4:3

if added = 10 L

ratio become = 4:5

find initial quantity?

$$4x \quad : \quad 3x$$

by added 10

$$4x + 10 \quad : \quad 3x + 10 = 4:5$$

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

$$5(4x+10) = 4(3x+10)$$

$$20x + 50 = 12x + 40$$

$$20x - 12x = 40 - 50$$

$$8x = 10$$

$$x = \frac{10}{8} = \frac{5}{4}$$

$$x = 5:4$$

initial ratio of mixture  
is 5:4.

(c)

Find Volume of ball?

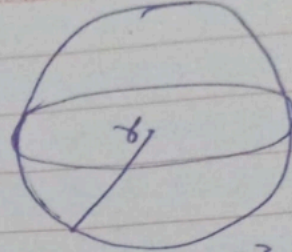
$$r = 12 \text{ cm}$$

Volume for sphere is

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

So  $= \frac{4}{3} \left( \frac{22}{7} \right) (12)^3$

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



$= (1.33) (3.14) (1728) \quad V = \frac{4}{3} \pi r^3$

$= \boxed{7147.5}$  Volume of football.

2

Given Series

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

$\underbrace{\quad\quad\quad}_2$ 
 $\underbrace{\quad\quad\quad}_7$ 
 $\underbrace{\quad\quad\quad}_{14}$ 
 $\underbrace{\quad\quad\quad}_{34}$ 
 $\underbrace{\quad\quad\quad}_{62}$