

Nowal Ashraf
Batch # 065
MOCK - 05
GISA

Date: _____

Section-1

Q No 2 :-

A :- What is Dengue :

Dengue is a type of fever in which bones and joints pain is most common. Dengue fever spreads during changing seasons when there is a breeding season of Mosquitoes.

Causative Agent :

Dengue fever is caused by a mosquito female "Aedes Egypti". Aedes egypti is a female mosquito, mostly larger in size than normal mosquitoes. It has white spots on its body. Aedes egypti breeds in fresh water sources

This female mosquito bites mostly at the time of sun rise and sun set.

Syptoms and Indications:-

Syptoms and indications are mostly shown after a week or two weeks of bite. Some common observed dengue fever symptoms are ;

- * High fever ranging from 101°C — 104°C
- * Red spots on body.
- * Bones and joints pain.
- * Decrease in the number of platelets.
- * Bleeding from nose and gums
- * Weakness felt by whole body.

Vaccine:-

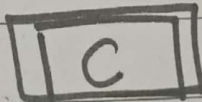
Still, there is no specific vaccine prepared for it but working is in progress to make its vaccine.

Treatment Of Dengue

No specific medicine for it. Only paracetamol is used for pain relief and fever. Juices are consumed for regaining platelets.

Prevention

- * Cover your full body.
- * Use sprays, coils and anti-mosquito lotions.
- * Empty all the fresh water sources near you.



Structure and Function of Mitochondria.

Mitochondria is the cell-organelle present in both plants and animals cells.

It is called power-house of cell because it produces ATP

During cellular respiration. So it is called as power-house - it can create its own energy

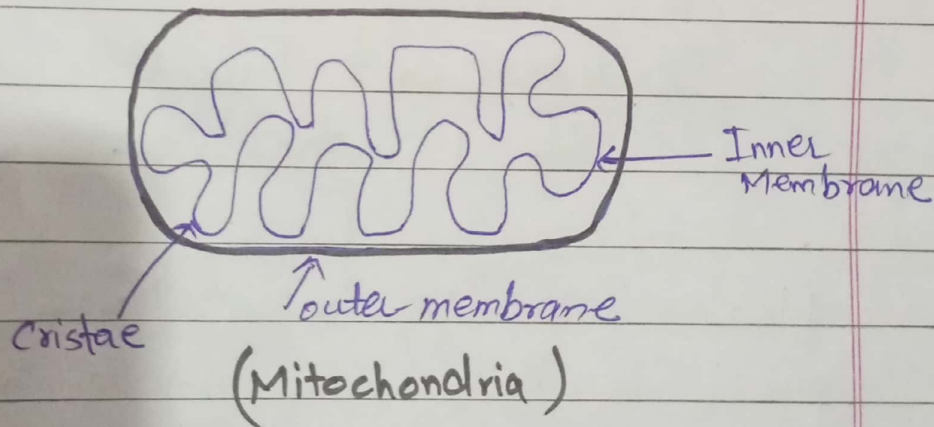
Structure Of Mitochondria:

Mitochondria is a double membranous structure present in the cell cytoplasm.

Outer membrane is smooth while inner membrane is folded inwardly to form a structure **Cristae**.

Cristae is the site of respiration.

Ribosomes are also attached to it.



Function Of Mitochondria:

Main and most important function of mitochondria is production

of energy during cellular respiration, so it provides site for the mechanism of cellular respiration. It creates Adenosine tri phosphate (ATP). Therefore called as power-house of cell because ATP is energy currency of cell.

D

Covalent Bonds & its Types

• The type of chemical bond which is created by different atoms through mutual sharing of electrons between them."

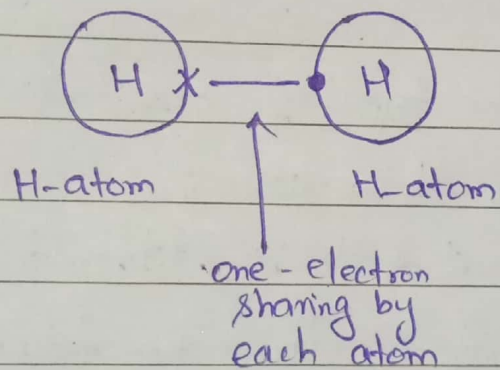
Atoms form bonds to gain stability by following octet rule. They tend to complete their outermost shell for the sake of stability.

I Types Of Covalent Bond on the basis of electrons sharing:

There are mainly three types of covalent bonds found in different molecules.

* Single Covalent Bonds:- These bonds are created by mutual sharing of one electron by each atom in a molecule.

e.g.: $\text{H}-\text{H}$

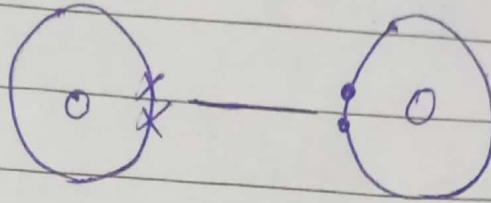
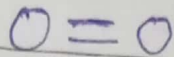


\therefore cross (x) and dot (•) represents electrons

* Double Covalent Bonds:-

Covalent bond formed by mutual sharing of two electrons by each atom is called double covalent bond.

Example, - O_2 Molecule



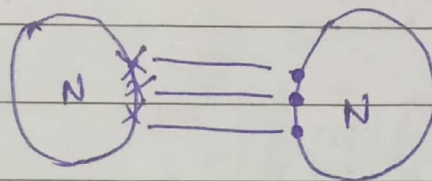
O-atom = O atoms

It is represented by two lines between symbols ($O=O$).

Triple Covalent Bond

It is formed when each bonding atom share three, three electron.

Example, - N_2



N-atom

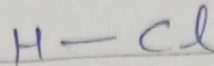
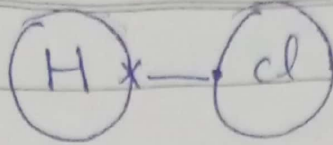
N-atom.

II Types of Covalent Bonds on the basis of atoms:

There are two such types.

- * **Polar Covalent Bond**: - When covalent bond is created between different atoms.

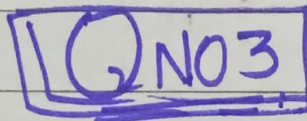
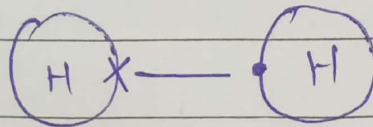
Example:-



* Non-polar Covalent Bond :-

Covalent bond formed between two same atoms is called non-polar covalent bond.

Example:-



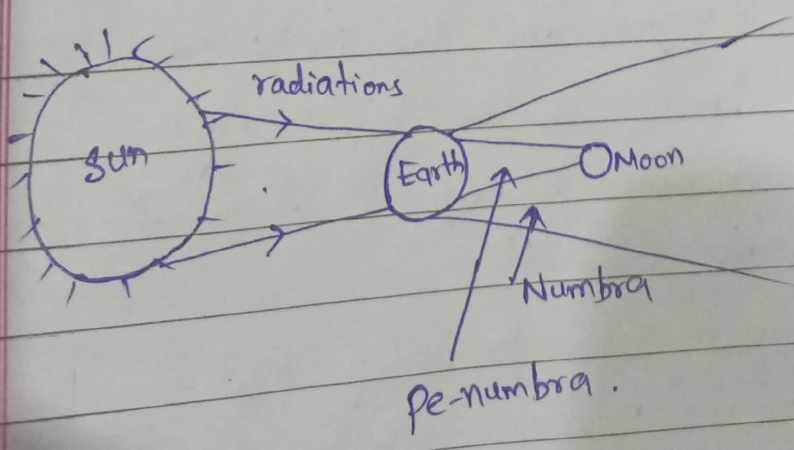
A:-

Lunar Eclipse

“The type of eclipse in which earth comes between the sun and moon.”

This type of solar eclipse is caused when earth comes in between the sun and moon during its rotation. We know that moon revolves around earth and earth revolves around this sun. During rotation a point reaches when earth is sandwiched between Sun and Moon. Moon has no light rather it gets its light from sun. When the way of sun radiations is blocked its brightening is diminished.

Diagrammatic Elaboration.



Types Of Lunar Eclipse :-

There are two types of lunar eclipse.

1) Full Lunar Eclipse :-

When the moon is completely hidden by earth. No light reaches the moon.

2) Partial Lunar Eclipse :-

When earth hinders some part of radiations from sun and half moon gets radiation it is called partial lunar eclipse.

IB

Functions Of Enzymes :-

“Enzymes are the proteins - known as the bio-catalyst during biological chemical reactions.”

Enzymes are basically tertiary globular proteins which catalyses

the bio-chemical processes in living organisms.

Main Characteristics

- * They catalyze the bio-chemical reactions by increasing the rate of reaction.
- * They are very specific in nature.

Functions Of Enzymes:

Enzymes are the important part of all bio-chemical reactions. Some of its functions are described here.

- (i) Enzymes acts as bio-catalyst. Their main function is to **accelerate the rate of reaction** millions times.
- (ii) Enzymes are **specific** in nature, so they perform only

specified reaction. For example **Lipase** enzyme is only used to catalyse **lipids** digestion.

(iii) Enzymes are involved in **fermentation** so basically it is used to form **beverages** and **alcohols**.

(iv) Enzymes can **digest wood** so they are used in **paper making industry**.

(v) Enzymes are used in **bread making** because it **ferments the carbohydrates**.

(vi) Enzymes are also used as **biological detergents** used to remove the stains of **lipids** and **proteins**.

Electromagnetic Radiations:-

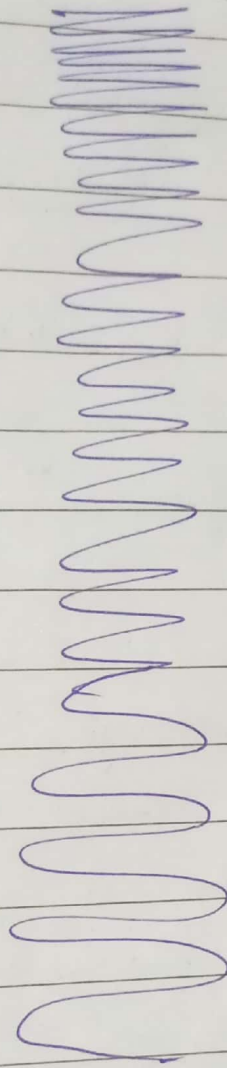
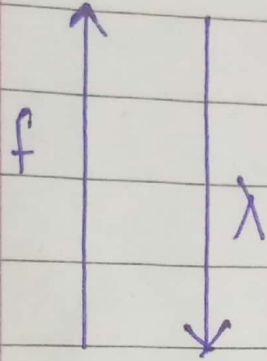
These are the radiations which requires no medium for propagation."

These rays are a collection of many wavelengths and frequencies. These all radiations make a spectrum range called electromagnetic radiation spectrum.

EMR Spectrum :-

Electromagnetic radiations are collection of different radiations such as X-rays, gamma rays, radio waves, micro-waves, visible and infrared radiation. These all collectively form EMR spectrum as shown in following figure.

High Frequency
Low Wavelength



X-rays

γ-rays

U.V rays

visible

Infra-red
wavesMicro-
waves

Low Frequency
High wavelength

Radio
waves

EMR SPECTRUM

(i) X-rays: have the highest energy and frequency and lowest wavelength.

(ii) γ-rays: has less energy and frequency than x-rays.

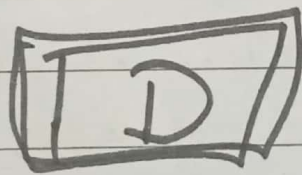
(iii) U.V rays: has high wavelength and less frequency than γ-rays.

(iv) Visible rays :- They have less energy and less frequency than U.V rays.

(v) I.R rays :- They have less energy and frequency than visible.

(vi) Micro-waves :- They have high wavelength and low frequency as compared to I.R rays.

(vii) Radio-waves :- These waves have highest wavelength and lowest frequency.



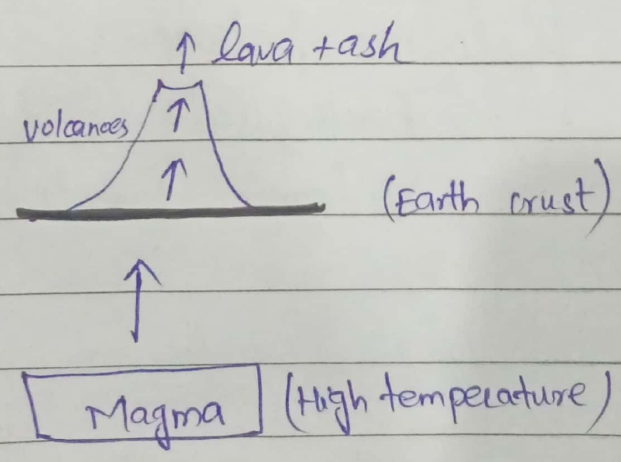
Relation between Earthquake and Volcanic Eruptions :-

Earth Quake is the trembling of tectonic plates by different

factors. These factors can be ;

- (i) Earth plates- tectonic plates re-arrangement.
- (ii) Volcanic Eruption.
- (iii) Introduction of high energy into earth. Water displacement such as in dams.
- (iv) Nuclear Fission.

Volcanic Eruption is the emission of lava from earth crust's surface. Our earth is like an egg. In earth's core there exist magma when it comes out from the surface of earth it is called Lava



How both are inter-connected:-

Magma is a combination of different compounds, ions, gases at high temperature almost of $20,000^{\circ}\text{C}$. When Magma comes out from earth's crust by bursting it, Earth's crust and tectonic plates are disturbed and shaken so volcanic eruption can be a cause of earth quake.



Section - II

Q No 6 :-

A - Findout ~~the~~ value of K

9, 8, 10, K, 12

Mean = 15

Apply Formula of Arithmetic Mean.

Arithmetic Mean = $\frac{\text{Sum of all values}}{\text{no. of value.}}$

$$\text{Mean} = \frac{9+8+10+K+12}{05}$$

Mean is given 15 so

$$15 = \frac{9+8+10+K+12}{05}$$

Cross Multiply

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

$$75 = 39 + K$$

$$75 - 39 = K$$

$$36 = K$$

so value of K is 36. Ans.

Q.10 :- Complete the series :-

-40, -8, 6, 40, 102, ?

* Find the pattern between given numbers.

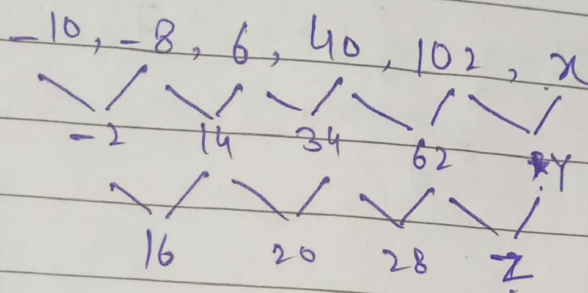
6

Day: _____

5

Date: _____

* The pattern present in given series is addition of -2, 14, 34, 62 which in previous number so by following this pattern 102 is added in 102 and the last number of series is 204.



$$z = 40$$

$$y = 102$$

$$x = 204 \text{ Ans.}$$

IC :-

Volume of football = ?

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

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

$$= \frac{4}{3} \times 3.14 \times (12)^3$$

$$\text{Volume} = \frac{4}{3} \times 3.14 \times 1728 = 7126 \text{ cm}$$

Q No 8

a

Formula is given

$$\text{Charge} = \text{₹}20 + 4n$$

For seven windows the charge will be

$$\begin{aligned} \text{Charge} &= \text{₹}20 + 4(7) \\ &= \text{₹}20 + 28 \end{aligned}$$

1c

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

where

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

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

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

$$(A \cup B)^* = \{10, 11, 12, 13, 15\} \cup \{10, 12, 14\}$$

$$(A \cup B)^* = \{10, 11, 12, 13, 14, 15\}$$

$$(A \cup B) \cup (U) = (A \cup B)' = \{10, 11, 12, 13, 14, 15, 16, 18\}$$

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

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

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

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

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

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

So proved

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

1 D

Find the Number
of triangles

There are 24 triangles present in given figure.