

Q No: 8

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

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

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

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

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

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

Proved

Q8:(d)

Ans :

16 triangles

QNO:8(a)

Ans :

① Replies

② Humanity,

Q8:

①

$$\pounds 20 + 4m$$

where m is the number of windows

$$m = 7$$

$$\pounds 20 + 4(7) = \boxed{48}$$

Q No: 7(B)

$$P \text{ and } Q = 5050$$

$$Q \text{ and } R = 6250$$

$$P \text{ and } R = 5200$$

$$P = ?$$

$$5050 = \frac{P+Q}{2} = \frac{5050}{2} = 5050 \times 2 = 10100$$

$$6250 = \frac{Q+R}{2} = \frac{6250}{2} = 6250 \times 2 = 12500$$

$$5200 = \frac{P+R}{2} = \frac{5200}{2} = 5200 \times 2 = 10400$$

$$(P+Q) + (Q+R) + (P+R) = 33000$$

$$2P + 2Q + 2R = \frac{33000}{2} = 16500$$

$$P+Q+R = 16500$$

\therefore subtract $Q+R$

$$P = (16500 - 12500) = \boxed{4000}$$

$$\boxed{P = 4000}$$

QNO: 7(1)

let, $x = \text{James's dad's age}$

$y = \text{James's age}$

$$x = 4y \text{ --- (1)}$$

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

$$x + 14 = 2y + 28$$

$$x = 2y + 28 - 14$$

$$x = 2y + 14$$

$$x - 2y = 14$$

$$4y - 2y = 14$$

$$2y = 14$$

$$y = \frac{14}{2}$$

$$= \boxed{7}$$

James's age.

Put y 's value eq (1)

$$x = 4y$$

$$x = 4(7)$$

$$\boxed{x = 28}$$

current age of
James's dad

Q No: 7(c)

$$P = \frac{\text{No. of ways of Occurrence}}{\text{No. of possible outcomes}}$$

$$P(\text{Two heads}) = \frac{105}{500} = \boxed{0.21}$$

$$P(\text{One heads}) = \frac{275}{500} = \boxed{0.55}$$

$$P(\text{NO head}) = \frac{120}{500} = \boxed{0.24}$$

Q No: 2(a)

Ans:

Dengue is a mosquito-borne viral disease that rapidly spread in all over region. As per WHO, Dengue is found in tropical and sub-tropical climates world wide. Dengue mostly found in urban and semi-urban areas. According to the report, about half of the population is now at risk with an estimate 100-400^{million} cases occurring each year.

Causes

Dengue is a viral infection caused by dengue virus (DENV), transmitted to humans through the bite of infected mosquitoes. It has four distinct types, DEN-1, DEN-2, DEN-3, DEN-4. Recovery from each type needs distinct precautions and provide life long immunity against that particular type.

Symptoms

Symptoms, which usually begin from 4 to 6 days after infection and last to 10 to 12 days. Symptoms ~~int~~ include:

Sudden high fever

Severe headache

Pain behind eyes

Joint and muscle pain

Fatigue

~~the~~ Vomiting, Nose and gum bleeding etcetra.

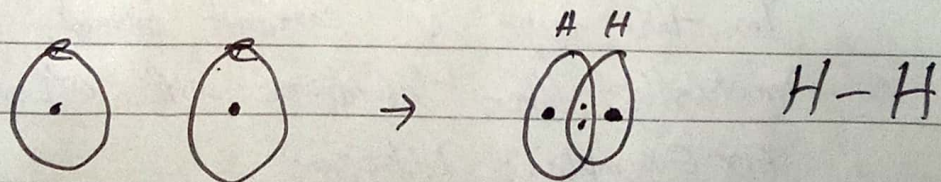
Q No: 2(d)

Ans:

The bond which is formed through mutual sharing of electrons between two atoms, is called covalent bond.

It is the bond between non-metals.

Moreover, it is more stable form of bond. For Example: H_2



Explanation:

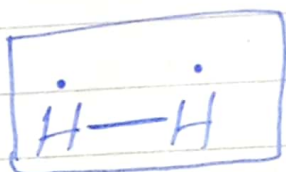
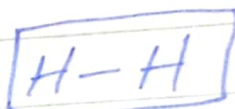
In this form, atoms mutually share their electron for attaining the properties of nearest noble gas.

Types of Covalent Bond

Single Covalent Bond

In single covalent bond atom shares ^{mutually} the single electron with other atoms.

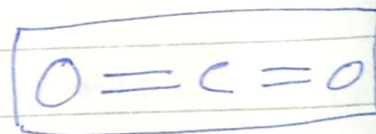
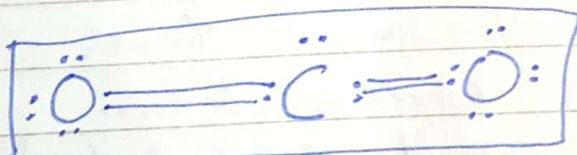
For Example: H_2



Double Covalent Bond

In double covalent bond, atoms ^{mutually} share two electrons with other atom. For Example:

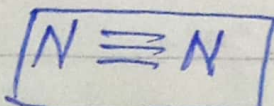
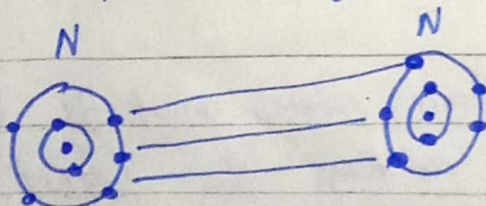
CO_2 .



Tripple Covalent Bond

In this type of covalent bond, atoms share mutually - three electrons with other atom.

For Example: Nitrogen



Ques 2 (6) Mitochondria

It is double membraneous and self-replicating ~~structure~~ part of cell.

The number of mitochondria may vary cell to cell. The function of mitochondria is to process the cellular respiration through which synthesis of ATP takes place. It contains the major site of cellular respiration which makes it the power house of cell. ATP is also known as energy currency of cell.

Ques 2 (8)

Dark Matter

Dark matter is a matter in ~~space~~ ^{Universe} which consist of non-interacting particles. Moreover, non-interacting particles do not interact with light and electromagnetic field. It is about 27% of dark matter present in the Universe.

Dark Energy

It is a massive region in the ~~Universe~~ ^{space} that is so dense within certain radius.

Its gravitational field does not let any-thing slip from it, not even the light.

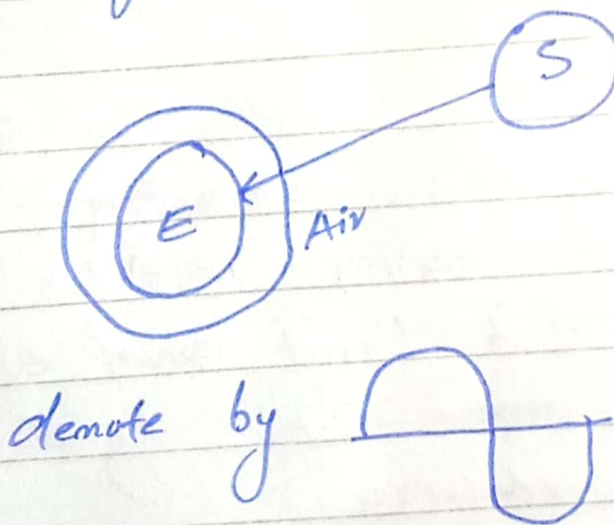
It forms when star does not maintain its internal pressure and gravity. Resultantly,

it collapses and form a black energy region.
~~Further~~ lastly, This collapse occurs in a star
due to nuclear fusion reaction in the star's
Core.

QNO:3(c)

Electromagnetic Radiations

The stream of photons travelling in the air or
with speed of light in the air or
vacuum. These waves do not
require any medium to travel.
E.g = Light waves of Sun.

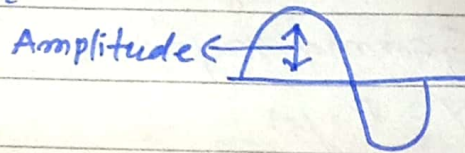


Properties of Electromagnetic Radiations

① Amplitude:

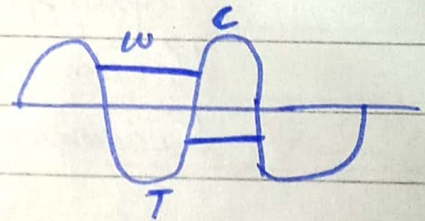
It is all about measure of how big a wave is.

For Instance: The waves of sea are how much bigger in the case of Tsunami. It means it is the height of wave from its equilibrium position.



② Wavelength:

It is the length of two adjacent crest and trough of the wave.



③ Frequency:

Frequency is all about the number of waves passing through a point in one second.

Energy of wave is directly proportional to its ~~length~~ frequency

$$E \propto f$$

$$E = hf$$

↳ Planck's Constant

Spectrum of ER

Spectrum of ER is also known as types of ER. These wave can be differentiated either by wave length or by frequency. There are seven spectrums of ER. Each one has its own wave length and frequency and on that basis they perform. Spectrum of ER includes:

Gamma rays.

X-Rays.

Ultra violet rays.

Visible light.

Infrared.

Microwaves.

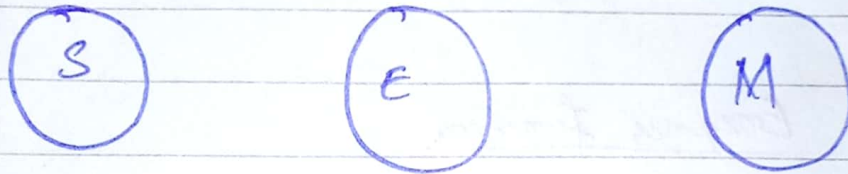
Radiowaves.

Q No: 3(9)

Lunar Eclipse

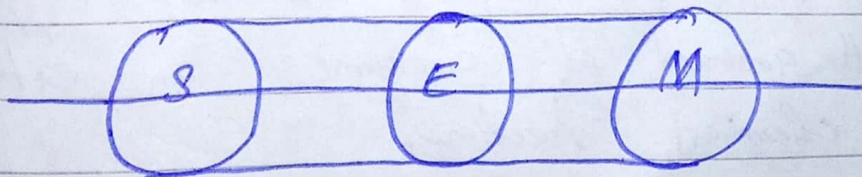
When earth moves between sun and moon, such eclipse called lunar eclipse. Lunar eclipse further divided into two categories.

- ① Total Lunar eclipse
- ② Partial Lunar eclipse



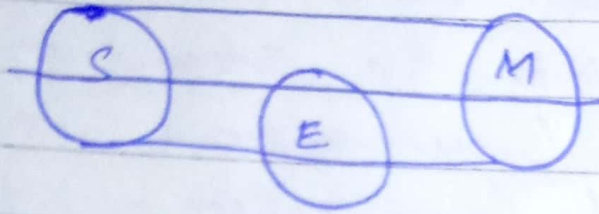
Total Lunar Eclipse

When earth is exactly aligned on same line joining the centre of sun and moon, such eclipse called total lunar eclipse.



partial Lunar eclipse

When earth is above or below the central line of ~~sun~~ sun and Moon, such eclipse called partial Lunar eclipse.



Enzymes' function

Enzymes are protein which are necessary to run the metabolic process ⁱⁿ the body. They speed up rate of reaction because of this action are also called it ~~the~~ biological catalyst. They participate in chemical reaction without being used up. Moreover, only small amount of enzymes can catalyse the chemical reaction.

QNO:3(d)

Yes, earthquakes and volcanic eruptions are interconnected when earthquake triggers in the ~~region~~ of volcanic region or besides the areas where volcanic eruption occurred in the past. In that case, earthquake ~~may~~^{would} fuel the volcanic activity in that region. Moreover, the release of ~~gas~~^{pressure} during the movement of tectonic plates also contributes in volcanic eruption.