

1.

## KINZA-OB 60

### QUESTION-4

If u have attempted this paper in 3 hours, then v good

Fine paper presentation

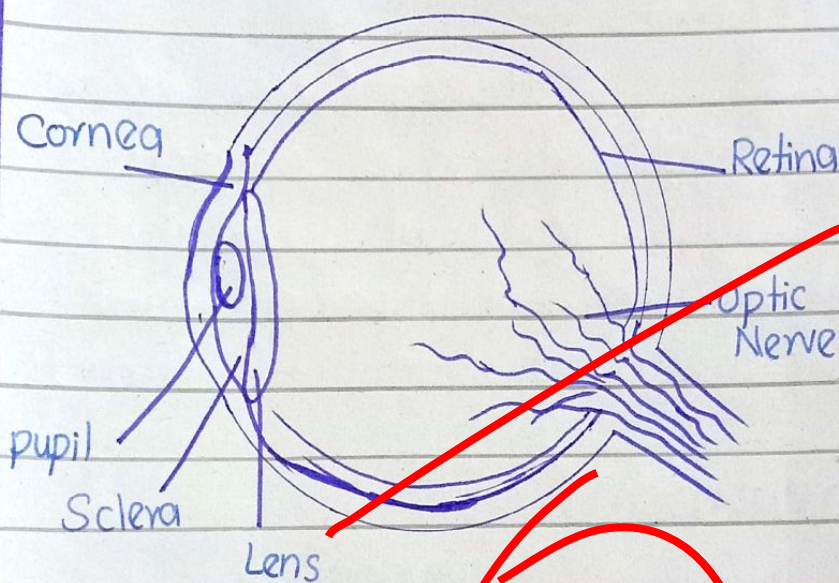
Enough length

Enough headings

V good for math portion

Keep length equal for all answers

### (a) EYE-DRAW



**Figure:-** Structure of Human eye

### MYOPIA :-

Myopia also known as nearsightedness is an eye disease in which retina form the image behind the focal length or focal length is before the retina. In such case, a persons ability to see far is blurred.

## Treatment:-

Myopia can be treated by wearing contact lenses, surgery like LASIK or by wearing glasses.

## HYPEROPIA:-

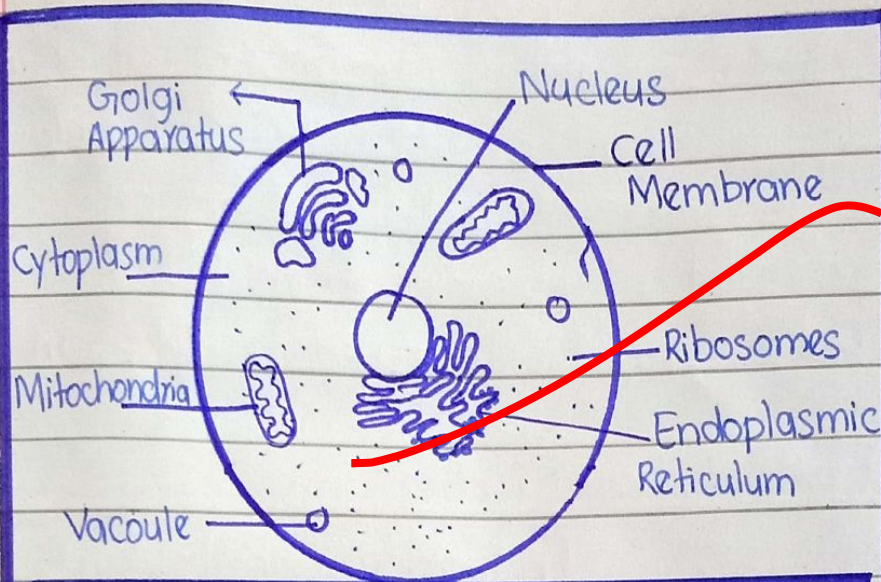
Hyperopia also known as farsightedness is an eye disease in which focal point is behind the retina. Person with hyperopia can't see near object clearly and blurred.

## Treatment:-

Hyperopia can be treated by Refractive surgery which includes

1. Refractive Laser Exchange
2. LASIK surgery
3. wearing contact lenses
4. wearing contact glasses.

## (b) CELL



**Figure:-** Structure of Human cell

### \* Cell Membrane:-

Cell membrane is the outer layer of animal cell. In plant cell, it is surrounded by cell wall. Cell membrane contains 60% to 80% proteins, 40% to 20% lipids and a small amount of carbohydrates. Proteins are embedded in bi-layer of lipids forming Fluid Mosaic model. It acts as a barrier, helps in transport of material and also helps in food intake of cell.

## CYTOPLASM:-

Cytoplasm is thick and semi-viscous fluid of cell in which all the organelles are present. It allows the movement of organelles and help in prevention of colliding of organelle. Movement of ribosomes from RER to Golgi Apparatus happened via cytoplasm.

## Endoplasmic Reticulum:-

Endoplasmic Reticulum is the network of channels extending from nucleus to the wall of cell. It has two types i.e Smooth endoplasmic reticulum which involves in detoxification of harmful drugs and Rough endoplasmic reticulum that have ribosomes on it which involve in synthesis of protein.

## Golgi Apparatus:-

Golgi Apparatus is a sac like structure present in cytoplasm. Protein from rough endoplasmic reticulum entered in golgi apparatus.

and the final product is transferred where it is required within the cell or transferred outside the cell.

### Mitochondria:-

Mitochondria is also known powerhouse of cell. It is because it involve in production of ATP by using protein. This ATP is like an energy currency through which cell or the whole body get energy.

### Vacuole:-

In animal cell, vacuole are small, scattered and more than one, while in plant cell they have one large central vacuole. It involves in storage of molecules & give rigidity to cell.

### Nucleus:-

Nucleus is present in center of cell and is involve in the synthesis of genetic material i.e DNA.

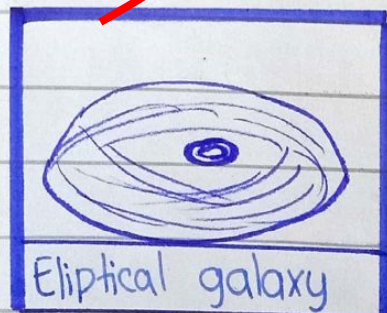
## (C) Galaxies

Galaxies are fundamental unit of universe. It consist of a large number of stars, a combination of dust and gases. According to Hubbul, there are three types of galaxies

### 1. Elliptical :-

Elliptical galaxies are present in abundance in universe.

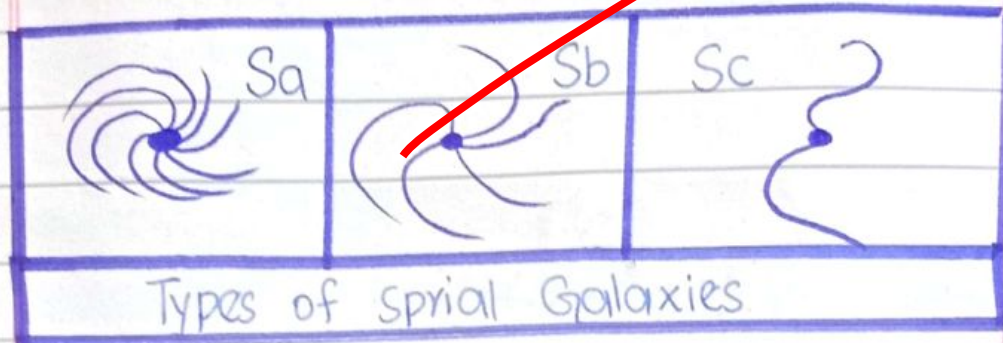
These types of galaxies do not have galactic arms like spiral ones - and contain clear nucleus



### 2. Spiral :-

Spiral galaxies constitute

20% of the universe. They have definite galactic arms and on its basis it is further divided into Sa, Sb and Sc category. Milkyway galaxy is also a spiral galaxy.



### Irregular:-

Irregular galaxies did not have any galactic arm instead in only consist combination of dust and gases. Two irregular galaxies are moving around milky way galaxy in which planet earth is present.

### Are galaxies moving:-

Yes, galaxies are moving. Galaxies move in two different types i.e around its nucleus and as a whole in universe. If the arms of spiral

galaxies are observed it can be clearly visible that they are moving. According to the Theory of Open Universe and Hubble, galaxies are moving away from each other and it can be observed if two random galaxies are taken under consideration.

### (d) COMPARE

SUN	EARTH
<ul style="list-style-type: none"> <li>Sun consist of three parts:-</li> <li>1. The Core</li> <li>2. The Radiative Zone</li> <li>3. The Convective Zone</li> </ul>	<ul style="list-style-type: none"> <li>Earth consists of three parts:-</li> <li>1. The Core</li> <li>2. The Mantle</li> <li>3. The Crust</li> </ul>
<b>Core</b>	<b>Core</b>
<p>Core of Sun is the inner most part forming all the heat and light energy. It is the place where nuclear</p>	<p>Core of Earth consists of two parts</p> <ol style="list-style-type: none"> <li>1. Inner core with thickness 1200 km</li> <li>2. Outer core with diameter of 2300 km.</li> </ol>



fusion take place. It mostly consist  
It has a temperature of iron and nickel  
of 15.6 million Kelvin. It has a temperature  
and 250 billion of  $5500^{\circ}\text{C}$ .  
atmospheric pressure.

### Radiative Zone

Radiative zone  
is present above  
the core. Heat energy  
from the core move  
upwards in radiative  
zone and move in  
the form of radiation.  
Temperature and  
Pressure began to  
decrease upward.

### Convective Zone

It is the outer  
most zone with  
lower temperature  
remaing 3.56 million  
After convective zone,  
atmosphere of sun  
started.

### Mantle

Mantle is the  
second layer with  
diameter of 2900km.  
Its lower part consist  
of molten nickel and  
iron forming Magma.  
Its upper part consist  
of solid nickel and  
magma.

### Crust

Earth's crust  
consist of two types  
oceanic crust and  
land crust. It has  
a thickness of  
0 to 60 km.

## QUESTION-5

### (a) CYCLONE

Cyclones are larger whirlpools that rotate around a center of low atmospheric pressure. It can be formed by two different ways:-

#### Formation 1:-

Warm air from the regions move up in the atmosphere. Cold air took the place of warm air coming from the surrounding. This form a cyclic process which result in heavy storms and rainy weather.

#### Formation 2:-

Cyclones are also formed by the meeting of warm air and cold air. This difference in atmospheric pressure caused the formation of clouds. Sometimes, they

align themselves with rotation of Earth and last for longer period.

## (b) DIFFERENCE

### Ionic bond:-

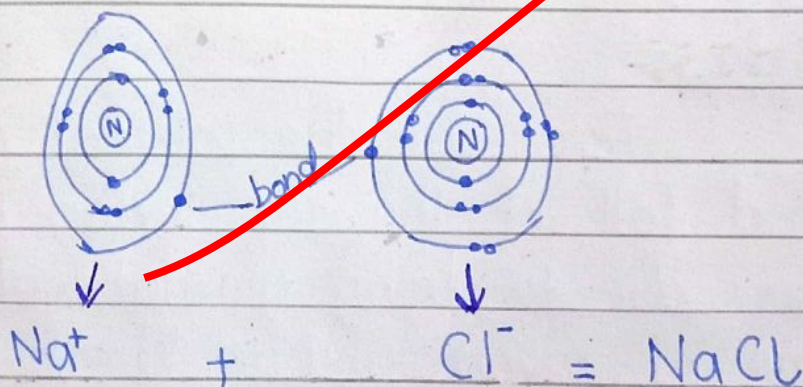
Ionic bond is formed by the complete transfer of electron of valance shell from one atom to another atom. Any positively or negatively charged particle is called ion.

### Example:-

Table Salt NaCl

Atomic Number of Sodium = Na = 11

Atomic Number of Chlorine = Cl = 17

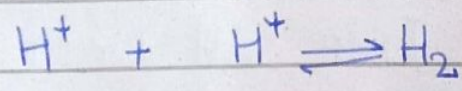
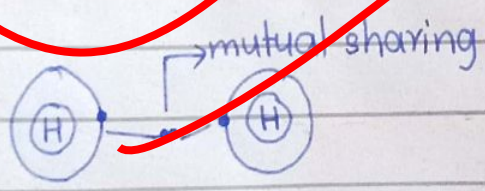


### Covalent bond:-

"The type of chemical bond which is formed by the **mutual sharing** of atoms between two or more particles is called covalent bond."

### Example:-

Hydrogen molecule



(d)

### Tides:-

Tides are the potential rise and fall of the sea surface. Tides form due to strong gravitational pull of moon and sun. This is a

natural phenomenon which usually occurs twice in a day. When water reaches its highest level it is called high tide and conversely, when the water falls to its lowest level it is called low tide. The difference between high tide and low tide is called tidal range.

## L.E.D:-

LED refers to light emitting diode. When the free electrons release energy when the circuit is **forward biased**, light energy is emitted. That's why it is called light emitting diode.

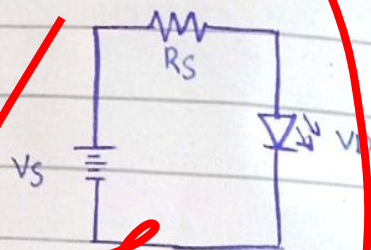
It is used in:-

- calculators
- Traffic lights
- Burglar alarms
- Mini Processors
- Remotes

It also contains a resistor to avoid direct flow of current when

it is increased to 3V. The current flow in LED is as follows

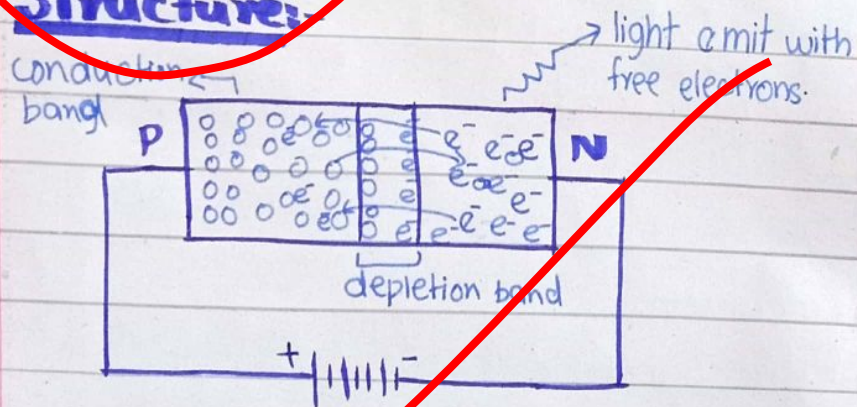
$$I_f = \frac{V_D - V_s}{R_s}$$



The symbol of L.E.D is :-



### Structure:



When the circuit is forward biased, the electrons from N-type and holes from P-type started moving towards

depletion region and started forming bond. Some of the electrons from N-type cross the barrier and enter into P-type forming bond with holes and same happen in the N-type zone. The remaining free electrons transfer energy in the form of light energy and we can see a blink of light.

## (C) USES

### Gamma:-

Gamma rays have the highest energy and shortest wavelength. It is used in:-

- To identify the crux of buildings and bridges
- To treat the cancerous cells, tumors and in removal of kidney stones

### X-Rays:-

Gamma rays' energy is higher than X-Rays and the

wavelength of X-Rays is longer than gamma rays. It is used in:-

- To see the inner structure of body. T
- To study the arrangement of atoms in different material.

## Radio waves:-

Radio waves have lowest energy and greater wavelength. It is used in:-

- TV, Radio
- Remotes
- Mobile Phones
- Satellites



17.

## SECTION-I

### QUESTION-6

(a)

Given:-

Radius = 8cm

Height = 15cm

To Find:-

Volume of cylinder = ?

Solution:-

$$\text{Volume} = \pi r^2 h$$

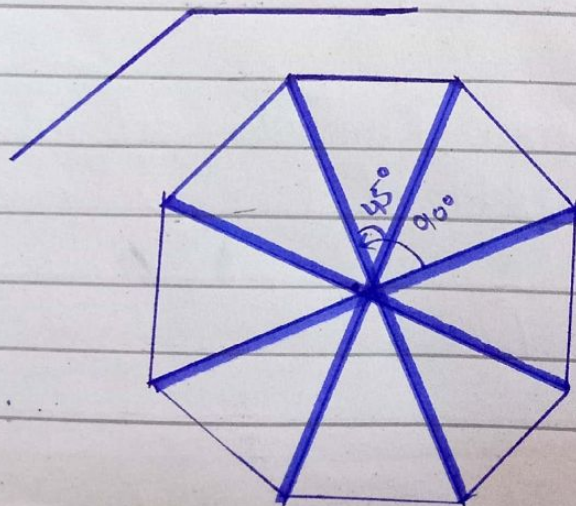
$$V = (3.15) \times (8)^2 \times 15$$

$$= 3.15 \times 64 \times 15$$

$$= 3.15 \times 960$$

$$\boxed{\text{Volume} = 3015.9 \text{ cm}^3}$$

(b)



We know that octagon is a polygon whose sides and angles are equal. To find angle we apply formula

$$\text{Angle} = \frac{(n-2) \times 180}{n} \quad n = \text{n.o of sides}$$

$$\text{Angle} = \frac{[(8-2) \times 180]}{8}$$

$$\text{Angle} = \frac{6 \times 180}{8}$$

$$\text{Angle} = \frac{1080}{8}$$

$$\text{Angle} = 135^\circ$$

Hence, each angle is  $135^\circ$ . **As All sides and angles are equal**

(C)

**Data:-**

length of <sup>Lake</sup> (mountain) = 4.6 mile

width of Lake = 2.2 mile

**Find :-**

Area = ?

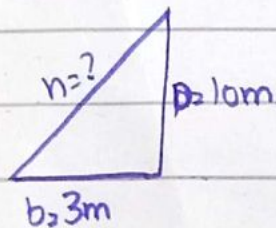
**Solution** =

$$A = L \times W$$

$$= 4.6 \times 2.2$$

$$A = 10.12 \text{ miles}^2$$

**(d)**



Applying pythagoras theorem

$$(\text{hyp})^2 = (\text{Perp})^2 + (\text{base})^2$$

$$= (10)^2 + (3)^2$$

$$= 100 + 9$$

$$(\text{hyp})^2 = 109$$

Taking square root on both sides

$$\sqrt{(\text{hypo})^2} = \sqrt{109}$$

$$\frac{109}{2}$$

$$\text{hyp} = 10.4 \text{ cm}$$

Height of ladder is 10.4 cm

QUESTION-7

(a)

Let the no be =  $x$ Actual value should be =  $\frac{5}{3}x$ Value got by person =  $\frac{3}{5}x$ 

$$\text{Error} = \frac{5}{3}x - \frac{3}{5}x$$

$$= \frac{5 \times 3}{3 \times 5}x - \frac{3 \times 3}{5 \times 3}x$$

$$= \frac{25-9}{15}$$

$$\text{Error} = \frac{16}{15}x$$

Error Percentage =

$$\Rightarrow \left( \frac{16}{15}x \times \frac{1}{\frac{3}{5}x} \times 100 \right)$$

$$\Rightarrow \left( \frac{16}{25}x \times 100 \right)$$

$$= 0.64 \times 100 \Rightarrow \boxed{64\%}$$

Percentage error is 64%

$$\begin{array}{r} 0.64 \\ 25 \overline{) 160} \\ \underline{150} \\ 100 \\ \underline{100} \\ 0 \end{array}$$

(b)

chocolate to ice cream ratio = 5:8

n.o of chocolate is = 30

n.o of ice cream = ?

$$5:8 :: 30:x$$

product of means = product of extremes

$$5 \times x = 30 \times 8$$

$$5x = 240$$

$$x = \frac{240}{5}$$

$$x = 48$$

N.o of ice-cream is 48.

(c)

one table = 30 mg

n.o of table = ?

Medication = 240 mg

22.

$$\text{n.o of table} = \frac{240}{30} = 8$$

$$\text{n.o of table} = 8$$

(d)

Average of 50 numbers = 20  
discarded numbers = 37, 43

$$\text{Total remaining numbers} = 50 - 2 = 48 \rightarrow (i)$$

$$\text{Sum of 50 n.o} = 20 \times 50 = 1000$$

$$\text{Sum of discarded n.o} = 37 + 43 = 80$$

$$\text{Remaining number} = 1000 - 80 = 920 \rightarrow (ii)$$

$$\text{Average of remaining n.o} = \frac{920}{48}$$

$$\text{Average of remaining numbers} = 19.17$$

THE  
END