

Good

Suggestions

Drsw 1 diagram in one question

Increase length

Add headings

Keep length equal for all answers

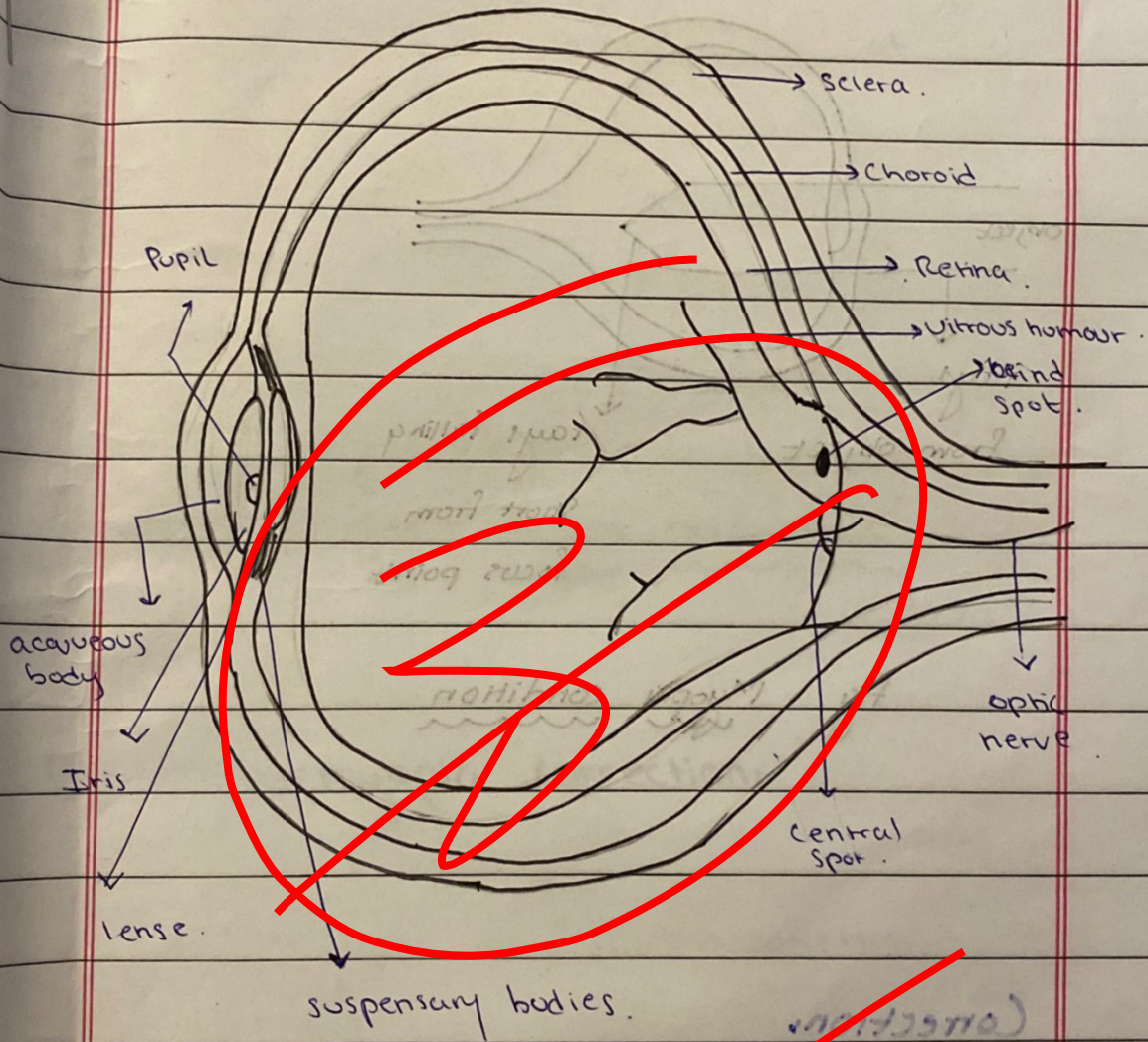
Day: _____

Date: _____

PART-II SECTION-I (i)
QUESTION NO: 04

PART:(A)

STRUCTURE OF AN EYE::



CORRECTION OF MYOPIA AND HYPERMYOPIA::

(i) Myopia correction: PART 1

Myopia is ^{near} far sightedness in which far objects are not clearly visible by an individual.

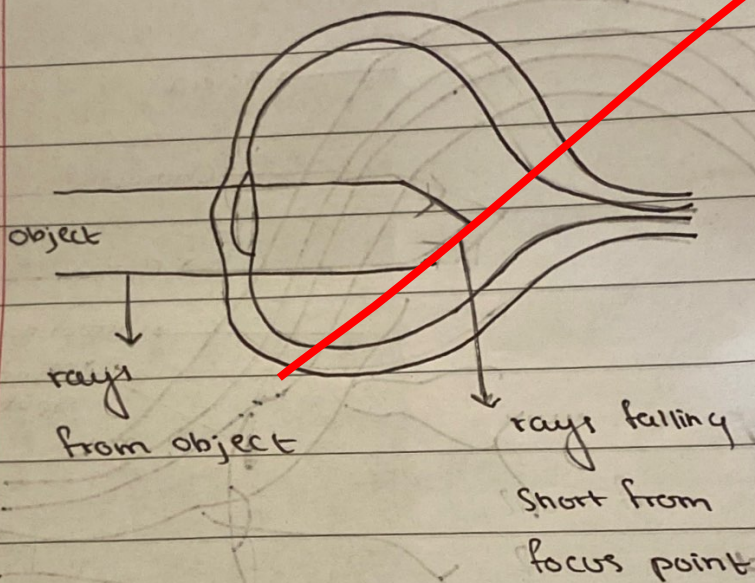
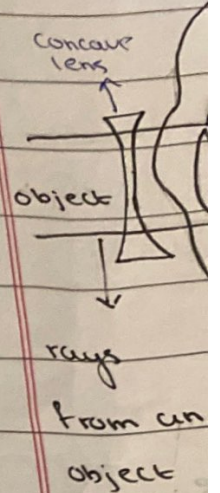


fig Myopia condition

Correction:

Myopia correction is with help of "concave lenses" which help guides the rays of an object to reach the central focalis

point



(ii) H

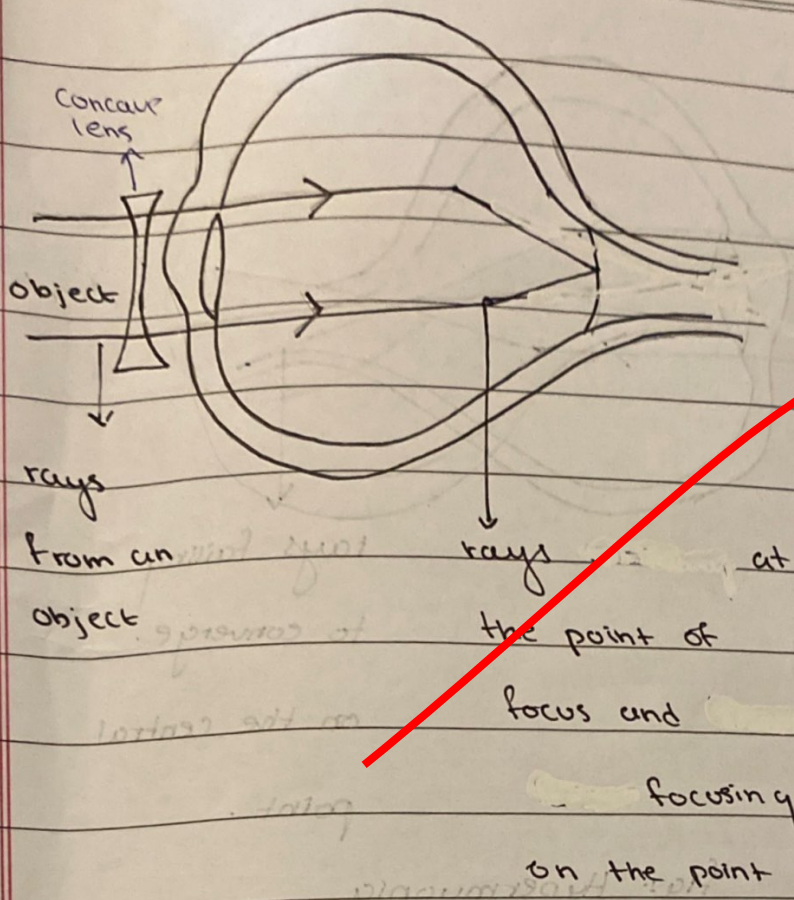


Figure : Myopia correctedness

(ii) Hyper myopia correction:

Hyper myopia is far sightedness where the rays from an object fail to focus on a point and cross the central point of focus.

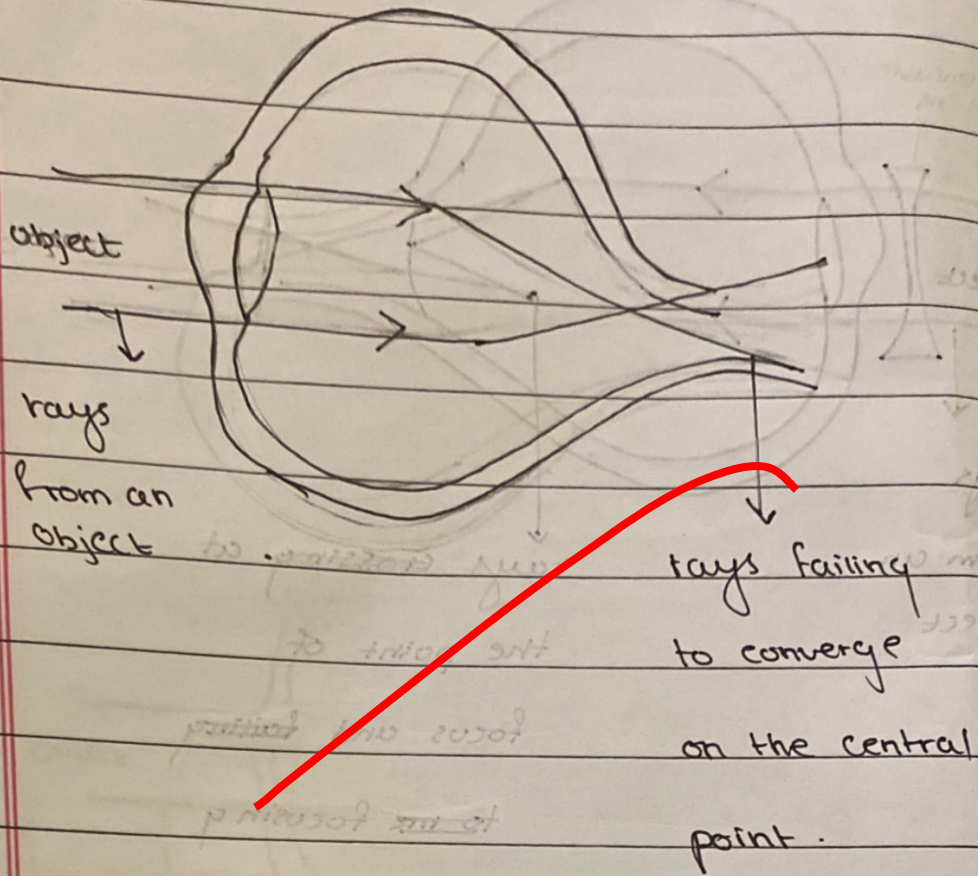
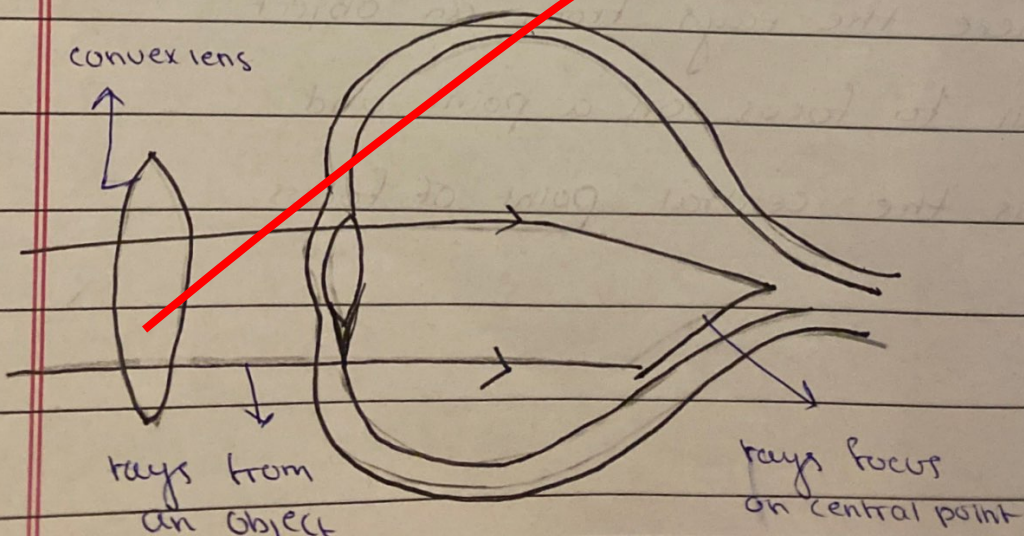


Fig.: Hypermyopia Condition

Correction:

Hyper myopia correction is with help of "convex lens" which guides the focus of rays on the central point.



PART (B) ::

DIFFERENT UNITS IN HUMAN CELL ::

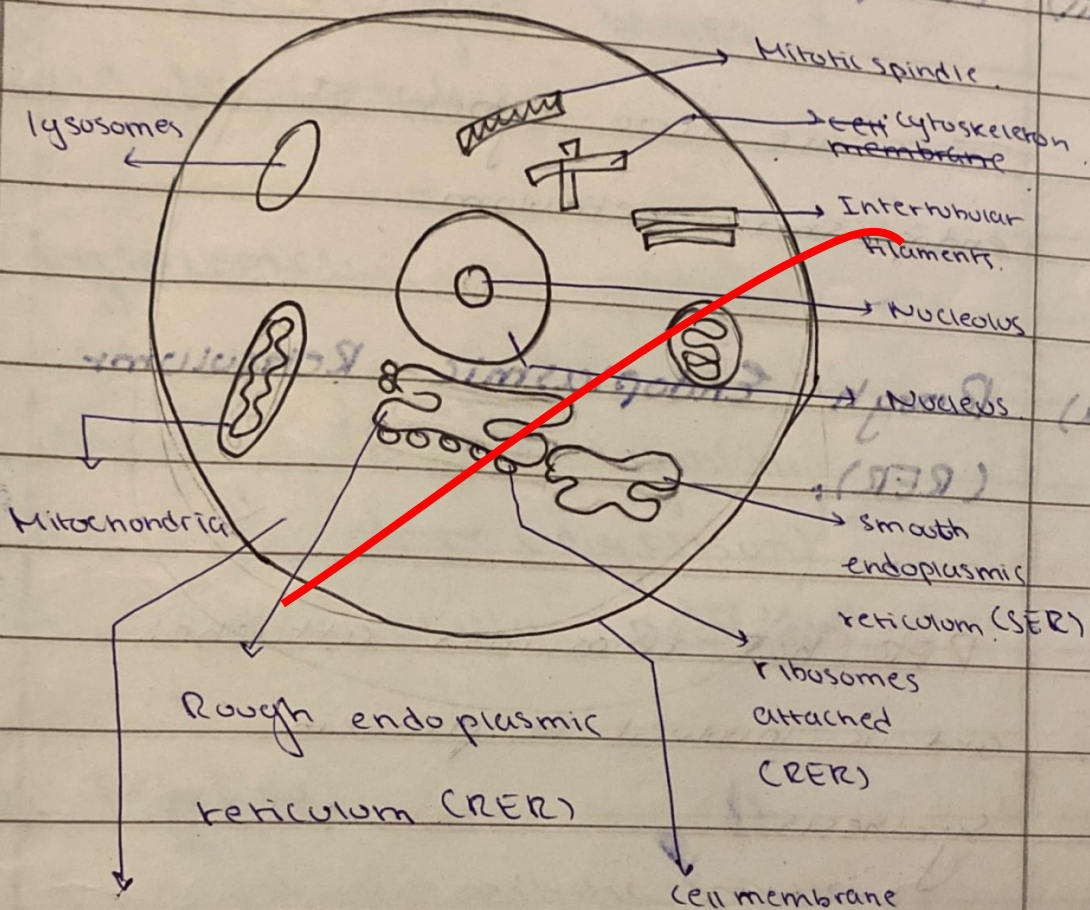


Fig. Cell structure of human

FUNCTIONS ::

(i) Nucleus:

Nucleus is the main controlling

body of the cell

(ii) **Nucleolus:**

Nucleolus contains the genetic material, DNA and RNA.

(iii) **Endoplasmic Reticulum:**

There are two types of endoplasmic reticulum.

(a) **Rough Endoplasmic Reticulum (RER):**

RER has ribosomes attached and is involved in protein synthesis.

(b) **Smooth Endoplasmic Reticulum (SER):**

SER is involved in synthesis of lipids.

(iv) **Mitochondria:**

Mitochondria is the power

house of cell involved in ^{the} AdenoTriphosphate (ATP) production.

(v) Golgi apparatus:

It is involved in packing of material into golgi bodies and transportation.

(vi) Lysosomes:

Lysosomes secrete specific enzymes for the engulfing and lysis of ~~cell~~ (digestion) of certain cellular products.

(vii) Myofiber:

Involved in mitotic spindle.

(viii) Cytoskeleton:

Involved in mitotic spindle.

(ix) Inter tubular fiber:

Hold the organelles together.

(x) Cell membrane:

Entrance and exit of specific molecules inside the cell.

(xi) Cytoplasm:

Conduction of various chemical reactions occur at this site

PART (C):

GALAXIES:

Galaxies are a combination of dust particles, planets and stars, all held together with help of gravitational force.

TYPES OF GALAXIES:

(i) Spiral galaxy:

Whirlpool galaxy.

(ii) Elliptical galaxy:
Eg.: Andromeda

(iii) Barred spiral galaxy:
Eg.: Milky way

(iv) Irregular galaxy:
Eg.: Large / Small Magellanic Cloud.

**GALAXIES ARE MOVING
OR AT REST,**

Galaxies "are moving" and not
static

**Justification of moving
galaxies:**

Galaxies are moving according to

'Big Bang Theory', universe is
expanding at a constant rate since
its formation.

(i) Starting point of singularity

(ii) Expansion of particles and formation of quarks and sub-atomic particles

(iii) constant rate of expansion

$$d = v \times t$$

where

d = distance

v = velocity

t = time

$$t = \frac{d}{v}$$

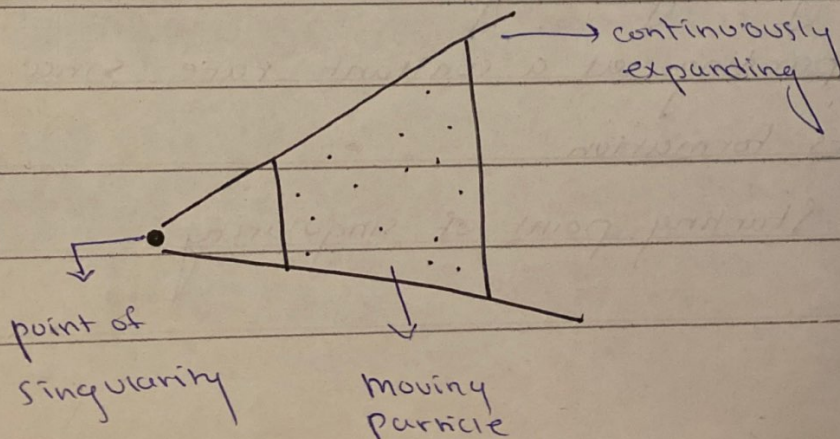
$$t = 1$$

$v = H_0 d$ (Hubble's

constant)

$$t = \frac{1}{H_0}$$

H_0



PART D:

COMPARISON OF MAIN PARTS OF SUN AND EARTH:

SUN

EARTH

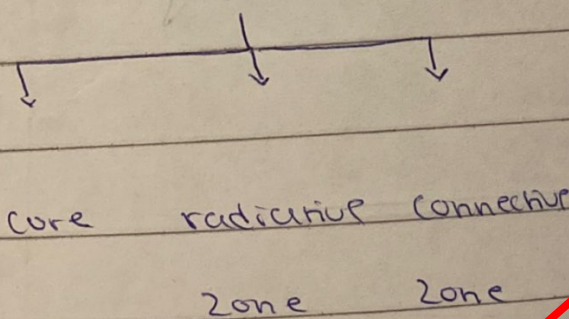
(i) Sun is composed mainly of Hydrogen

(i) Earth's atmosphere is mainly composed of nitrogen

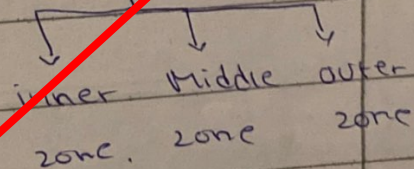
(ii) Sun is composed of six main parts Three inner and three outer

(ii) Earth's layer can be divided into physical and compositional layers

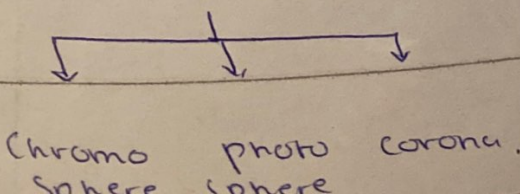
Inner zone



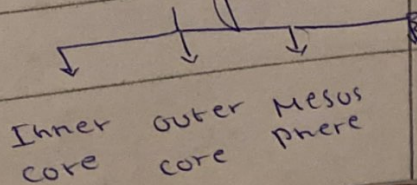
Physical layers



Outer zone



Compositional layers



Compositional
layers.

lithosphere
Asthenosphere

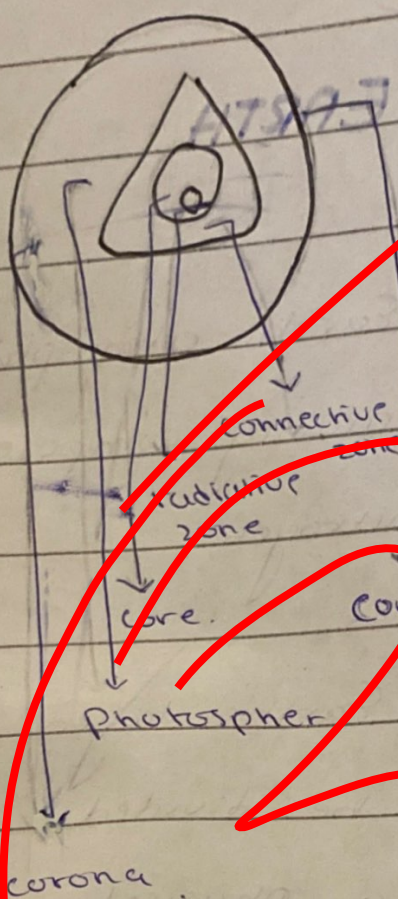


fig (Sun layers)

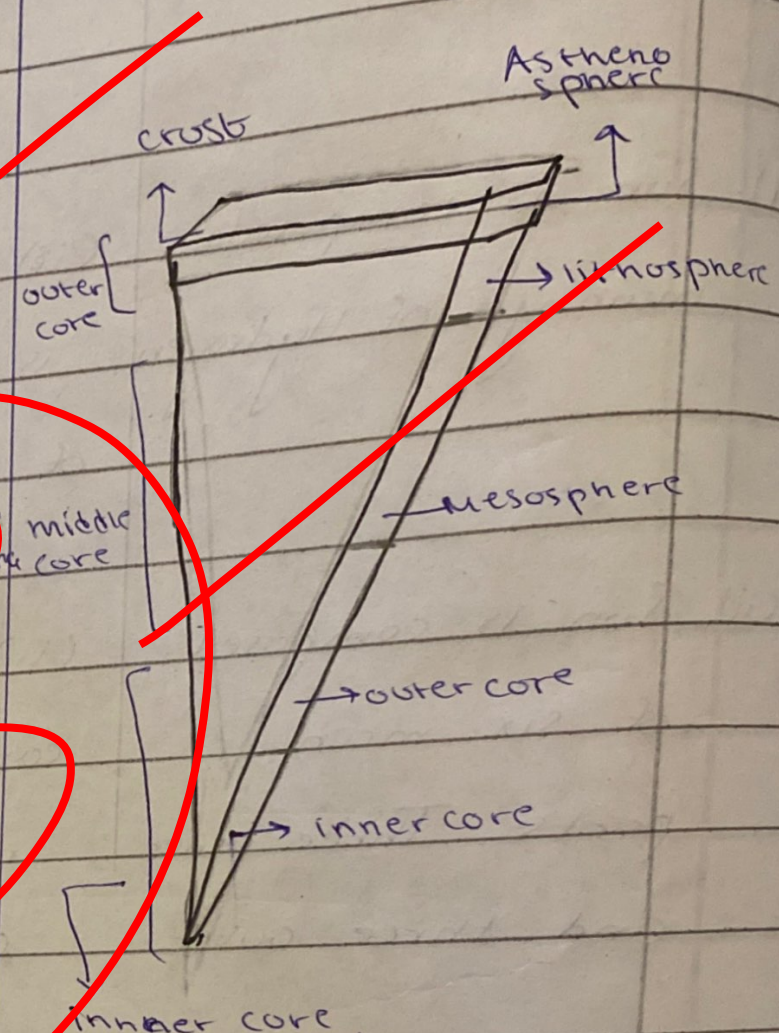


fig (Earth's layers)

PART (A):

CYCLONE FORMULATION:

Cyclone consists of a "a whirlwind of fast moving winds on the surface of sea water"

Formulation of cyclone consists of following steps:

(i) Rise of warm air from the surface of sea water.

(ii) Upward movement of the air and subsequent cooling of particles

(iii) Creation of low pressure at the base due to upward movement of air particles.

(iv) Occupation of the leftover space
at the lower pressure area by
the new particles of rising
air particles.

(v) Cyclone consists of an eye
central portion with low
atmospheric pressure and
an outer portion known as
eye wall which is the most
dangerous portion

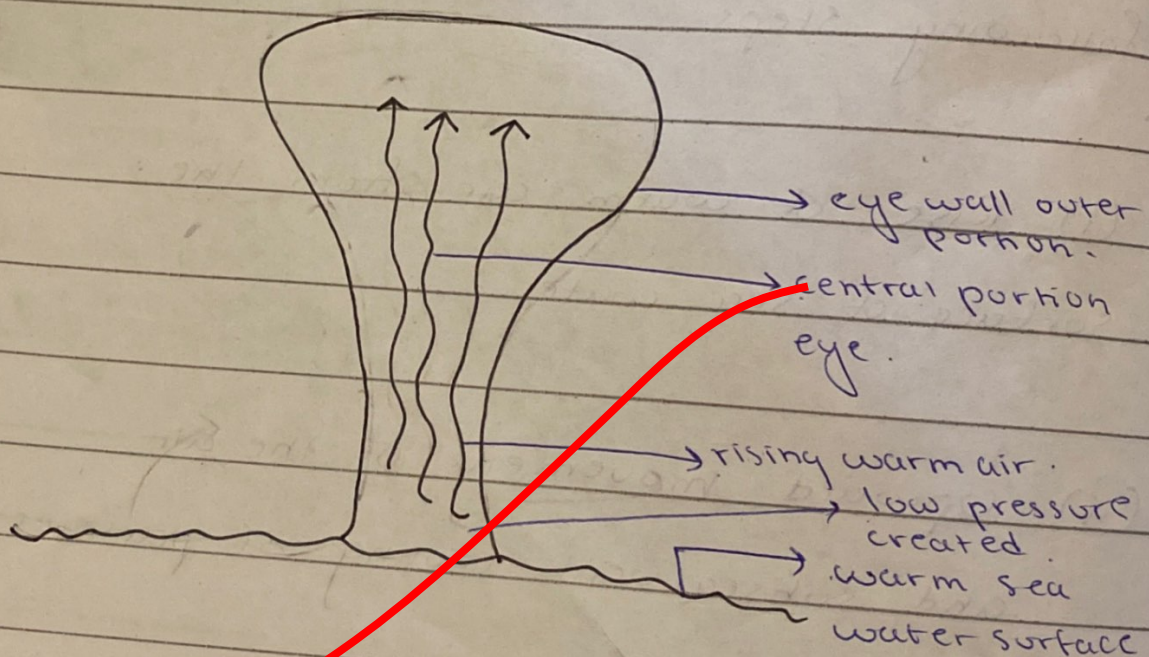


Figure :: Formation of
cyclone

DIFFERENTIATE BETWEEN IONIC AND COVALENT BOND:

IONIC BOND

COVALENT BOND

Ionic bond is formed between metal and non metal atom

Covalent bond formed between two non metal atoms

Boiling point and melting point is high

Boiling and melting point is low

State of elements with ionic bond at room temperature is solid

State of elements with covalent bond at room temperature is liquid

IONIC BOND

COVALENT BOND

Flammability is high

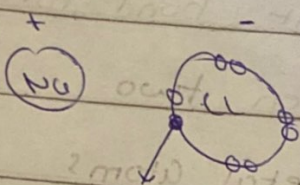
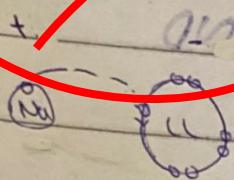
Flammability is

Example

Example

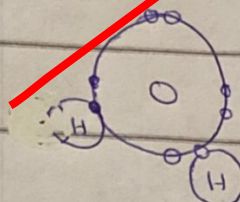
NaCl , H_2O

H_2O



transferred electron by

Na



PART (C)

USES OF GAMMA RAYS, X-RAYS, AND RADIO WAVES.

(i) GAMMA RAYS:

Gamma rays are short wavelength rays of electromagnetic radiations spectrum.

There uses are :

- (i) Cancer therapy
- (ii) Surgical procedures
- (iii) Stone cutting
- (iv) Industrial uses

X-rays:

X rays are short wavelength electromagnetic radiations.

Uses are as follows:

- (i) For medical purpose diagnosis
- (ii) Radiation therapy
- (iii) Detection of artifacts

Radiowaves:

Radiowaves have the longest wavelength

Used for following purposes:

- (i) General Positioning System (GPS)
- (ii) Mobile coverage
- (iii) Radio show transmission
- (iv) weather forecasting.

PART(D):

∴ गुरु-~~X~~

TIDES PHENOMENA

Tides are produced due to gravitational pull of the moon. Their rise and fall coordinates with moon cycle.

Tides are the rise and fall of the surface water of sea. Their production is dependent on the following factors.

- (i) Gravitational pull of moon.

(ii) Rotation of Earth around its axis.

LIGHT EMITTING DIODE PHENOMENA:

Light Emitting Diode (LED) is a semiconductor with p and n junction which is involved in emission of light and used in various technological commodities.

Process of emission of light by LED ::

(i) Bandwidth present between p and n junction.

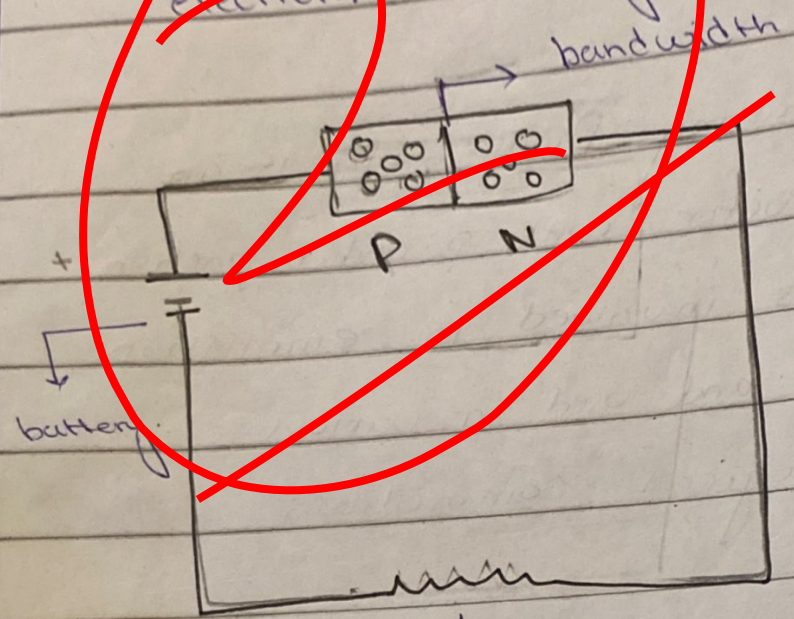
(ii) p junction containing abundance of electrons.

(iii) n junction containing abundance of holes.

(iv) Stimulus drives electrons towards

the filling of holes and electrons

(v) Crossing of bandwidth by electrons emit light



Process of recombination of light
of LED

Figure: LED circuit.

SECTION-II

QUESTION NO. 07

PART (A):

:04

$$\text{Percentage error} = \frac{\text{true value} - \text{Measured value}}{\text{True value}} \times 100\%$$

$$= \frac{5 - 3}{3} \times 100$$

$$\frac{2}{3}$$

$$= \frac{2}{3} \times 3 \times 100$$

$$= 2 \times 100$$

$$= 200\%$$

PART (B):

Ratio of chocolate to icecream
in a box is 5:8

Let x common multiple.

Number of icecream cones $8x$
and chocolates $5x$

No. of chocolates is 30.

$$5x = 30$$

$$x = 6$$

No. of cones $8 \times 6 = 48$.

\therefore No. of cones in box is 48.

Part (c):

Tablet contains medication = 30 mg

No. of tablets for 240 mg.

$$\text{\textcircled{3}} \quad 30 \text{ mg medication} = 1 \text{ tablet}$$

$$1 \text{ mg} \quad \text{"} \quad = \frac{1}{30} \text{ tablet.}$$

$$240 \text{ mg} \quad \text{"} \quad = \frac{1}{30} \times 240 \text{ tablet}$$

$$= 8 \text{ tablets}$$

\therefore Hence 8 tablets to Ms Smith
for medication.

PART (D)

Average of 50 numbers = 20

Sum of 50 no. = $20 \times 50 = 1000$

Sum of discarded = $37 + 43$
 $= 80$

Remaining no. = $1000 - 80 = 920$

Total remaining no. = 48

Average of remaining no. = $920 / 48$
 $= 19.17$

QUESTION NO: 08

PART: (A)

IQ (Intelligence Quotient) = $\frac{\text{Mental age}}{\text{Chronological age}}$

Factors affecting IQ.

Environmental

Cognitive development

Hereditary factors

Education

Parenting

3

Part (b):

No of triangles = 14

Part (c):

Probability = $\frac{\text{no of times}}{\text{Total possible outcomes}}$

Total possible outcomes

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

$$= \frac{1}{7}$$

PART (D):

(A): 7999