

Very good but
You need to attempt all 4 parts of every question

Enough length
Enough headings
Diagrams are fine

Write complete logic and steps in math portion

Section-II:-

Q-NO-3:-

(a)

Seats in hall = 400

occupied seats = 325

attendance percentage of capacity = $\frac{\text{occupied}}{\text{Total}} \times 100$

$$\text{attendance \%} = \frac{325}{400} \times 100 = 81.25\%$$

(b)

• According to given Data:

Days	Persons	Sugar
10	30	40 kg
X	80	320 kg

• According to formula of ratio:

$$X = \frac{20}{30} \times \frac{320}{40} = 3$$

Number of days = $X = 10 \times 3 = 30$

(d)

Radius of cylinder = $r = 10 \text{ cm}$

height = $h = 36 \text{ cm}$

Volume = $\pi r^2 h$

by putting values.

Volume = $3.14 \times 10^2 \times 36$

= 314×36

= 11404 cm^3

⇒ Given Data:

Radius of cylinder = $r = 10 \text{ cm} = \frac{10}{10} = 1 \text{ m}$

Height = $h = 36 \text{ cm} = \frac{36}{10} = 3.6 \text{ m}$

Volume = $V = \pi r^2 h$

⇒ by putting values.

$V = 3.14 \times (1)^2 \times 3.6$

= $3.14 \times 1 \times 3.6$

Volume = 11.4 m^3

Q-NO-8:-

(a)

Write complete logic and steps

• According to statement:

BROTHER is code as QDGSNQA

• as we can see that in above code each letter of code is one step backward in alphabets in reverse order, so "SISTER" would be written as

SISTER = QDGSNQA

(b)

Given Data:

Total cards = 12

Card Numbers = 1, 2, 3, 4, 5, ..., 12

To find:

(i) Probability of drawing no. 8 = ?

Acc. to formula

Probability = $\frac{\text{No of ways of occurrence}}{\text{Total possible outcomes}}$

$$E = \frac{4}{12}$$

(ii) Probability of an even number = ?

$$E = \frac{6}{12} = \frac{1}{2} = 0.5$$

(iii) Probability of a perfect square = ?

$$E = \frac{3}{12} = \frac{1}{4} = 0.25$$

(iv) Probability of a negative number = ?

$$E = \frac{0}{12} = \frac{0}{1}$$

(v) Probability of a number less than 13

$$E = \frac{12}{12} = \frac{1}{1}$$

(d)

Given Data:

Agesⁱⁿ group = 15, 15, 16, 16, 16, 17, 17, 18, 19

Totalⁱⁿ group = 9

To find out:

$$(i) \text{ Mean} = \frac{\text{Sum of ages}}{\text{Total students}} = \frac{149}{9} = 16.55$$

"Average of the given numbers."

(ii) **Median**: "The middle value in a series that separates upper half and lower half, if numbers are arranged in order."

15, 15, 16, 16, 16, 17, 17, 18, 19

$$\text{Median} = 16$$

(iii) **Mode** = 16: "The most frequently occurring number in the series"

(iv) **Range** = $19 - 15 = 4$: "Difference between the highest value and the lowest value in series."

SECTION-I

Q-NO-2:

(b)

⇒ Distinguish between Water soluble

& fat soluble vitamins:

Water Soluble vitamins

are those that easily dissolved in water, such as: Vitamin B-complex and Vitamin C. While fat soluble vitamins

are those that are absorbed in fats, such as: Vitamin A, D, E and K

⇒ Diets containing Fat soluble vitamins:

Vitamin A :-

- Milk
- Carrots
- Green Vegetables

Vitamin D :-

- Sunlight, milk

Vitamin E :-

- Green leafy vegetables • Avocados
- Seeds • Soybean • milk

Vitamin K :-

- Dark leafy vegetables (such as cabbage and colliflowers)

Diets containing water soluble vitamins:

Vitamin B-complex

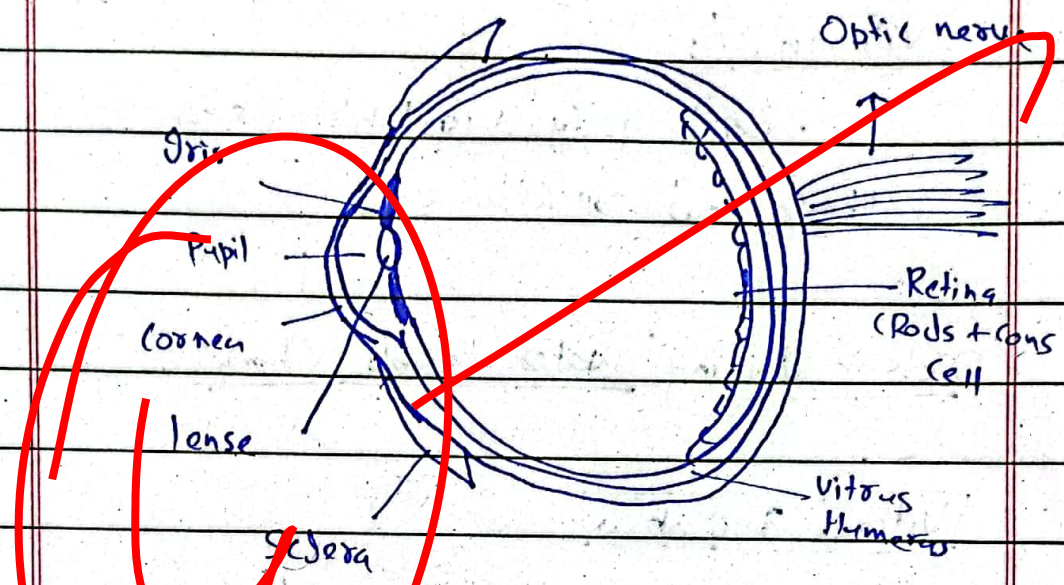
- Fruits and vegetable are rich sources of most of vitamin B such as Thiamine (vit. B1) Riboflavin (B2), Niacin (B3), B6 (B6 Biotin B7) e.t.c
- Milk and meat are good source of vitamin B12

Vitamin C (Ascorbic Acid):

- Fruits such as oranges
- Milk
- Vegetables

(C)

The Structure of Eye:-



Eye is an important sensory organ of human body that helps us seeing the things around us. Human eye consist of following structures that help in seeing process

1. Iris:- Iris is the most important structure as it controls the size of pupil.
2. Pupil:- light enters the lense through pupil.

3- Lense:- lense is the central structure that when light rays passes through it they are refracted, to form an image on retina

4: Retina:- Retina is the structure which receives the light signals and perceive it. It contain 2 important cells
(i) Rods: Receive the light waves
(ii) Cons: Perceived and differentiate the different colours

5: Cornea:- outer part that covers iris and pupil

6 - Sclera: Visible white portion of the eye

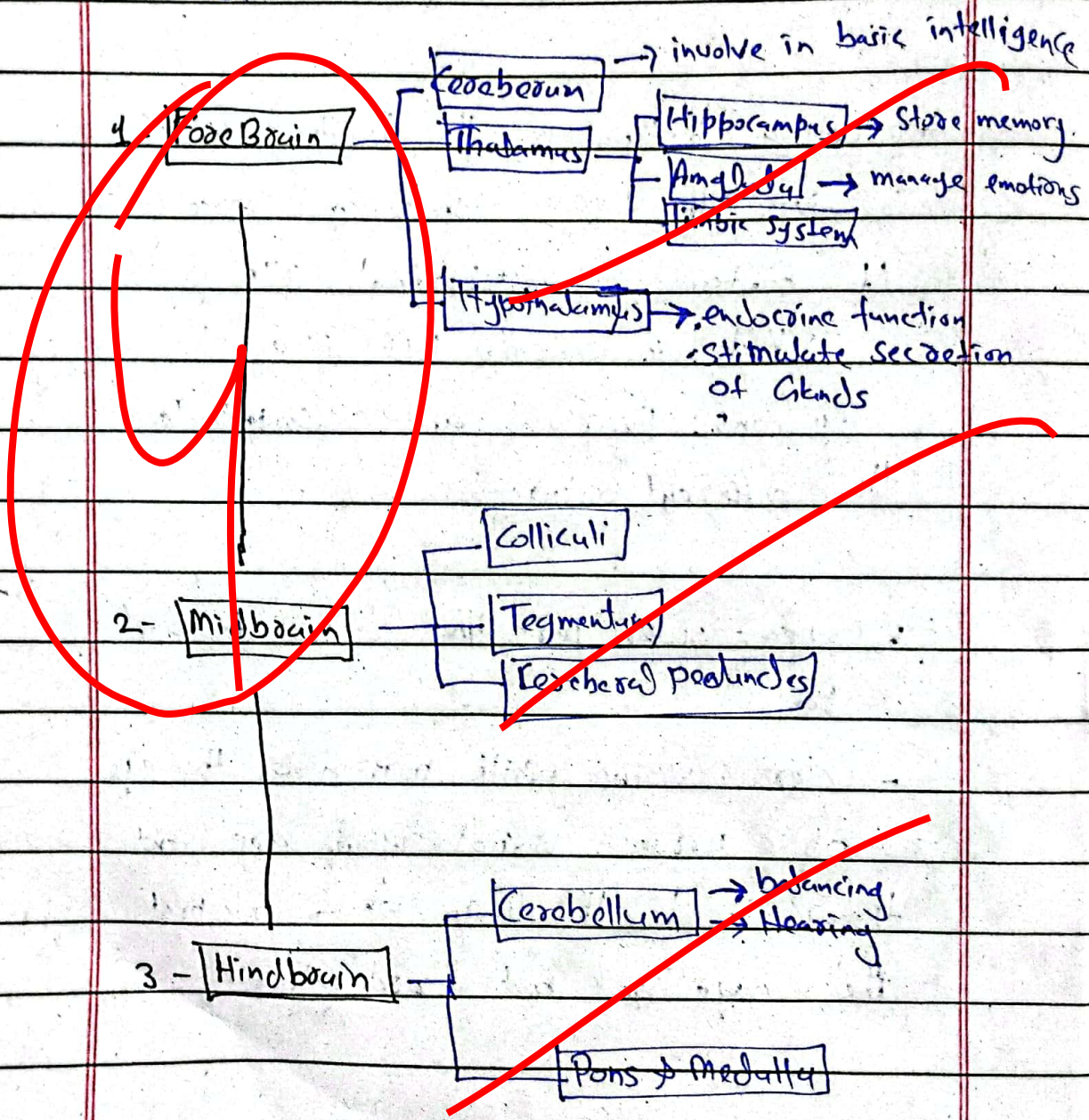
7 - optic nerves: Visual signals are sent through it to the brain which interpret the image and act accordingly.

— (d) —

Flow chart of different parts of Brain:

Brain is an important structure of Central Nervous

system that control all voluntary and involuntary functions of the body. following are important structures inside the brain



Q-NO-3:-

⇒ Global Warming ~ a Wild beast:

1- Definition:-

"Overall rise in global temperature under the effect of greenhouse gas and others is called global warming."

• According to IPCC The global temperature has risen about 1°C in last 100 years.

2- Threats of global warming:

1- Rising sea level: Indonesia is moving its capital from Jakarta to mainland due to threat of being sinking.

2- Melting of Glaciers: Glaciers are melting at speedily resulting in floods and water scarcity. According to NASA, most of Himalayan and Tibetan glaciers are in India.

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and, Pakistan are melting at very fast
pace.

3- Heavy floods :- another deadly consequence of global warming is havoc caused by deadly floods recently. Floods of 2022 in Pakistan is an important example of it that caused an economic loss of almost \$40 Billion in 2022.

4- Heatstrokes and health hazards :-

Global warming also resulting into multiple deadly diseases that are affecting humans badly. Various respiratory and skin diseases are being caused due to it.

→ Humans contribution towards global warming :-

1- Deforestation: one of the major human made cause that affected weather patterns and reduced trees resulted into increased greenhouse effect as trees are natural sinks of carbon.

2- Uncontrollable industrialization: Most of it has taken place in the last century that resulted into increase in greenhouse gases content in the atmosphere.

3- Environmental pollution.

severely affecting environment and contributing towards global warming.

(C)

Semi-Conductors:-

1- Introduction.

"Semi-conductor is a material having electrical conductivity falling between that of a conductor (e.g copper) and and insulator (e.g glass)."

- Silicon and Germanium are important examples.
- Semi-conductors are used in electronic appliances e.g LED.

2- Types:

It has two types

(i) Intrinsic semi-conductor :: A semi-conductor in its pure form is called intrinsic semi-conductor.

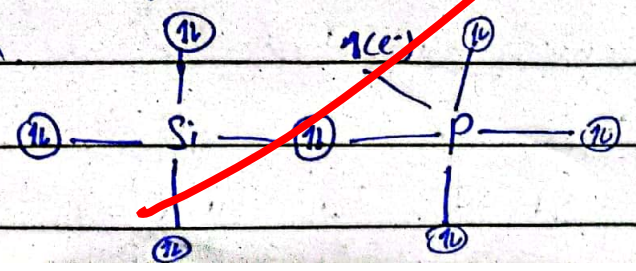
Example: Silicon and Germanium in its pure form.

(ii) Extrinsic semi-conductor: When an impurity (Dopant) is added to a pure semi-conductor from outside it becomes an extrinsic semi-conductor.

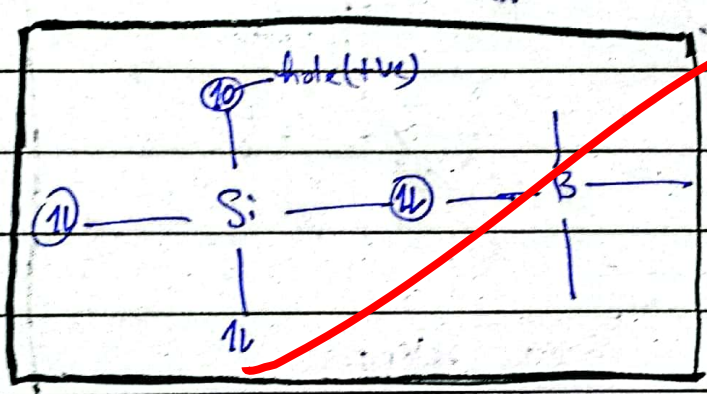
→ Doping is the process by which impurity is added.

3-N-Types and P-Type semi-conductors:

(i) N-Types: When impurity (Dopant) is added into a semi-conductor from group 5 of periodic table, it becomes an N-type semi-conductor. It has negative charge because it has 4 free electrons.



(ii) P-Type Semi-conductor: When impurity is added from group 3 of periodic table, it become P-type semi-conductor
 → It has positive charge as it has one empty space in bond that can be filled by an electron.
 → Examples of Dopant are Boron and aluminium.



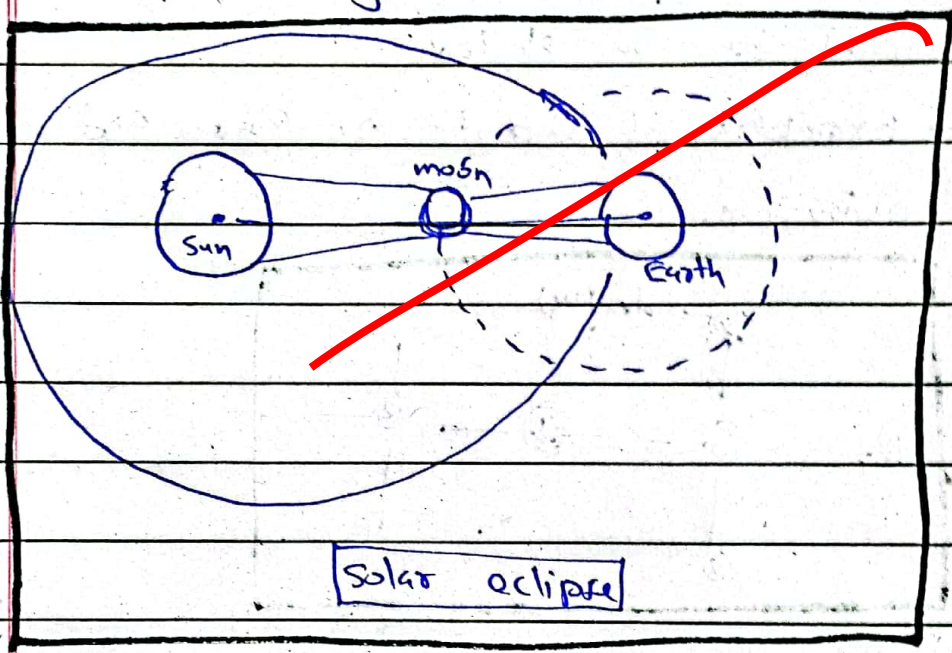
(d)

Eclipse:- "The obscuring of one astronomical object by another astronomical object is called eclipse."

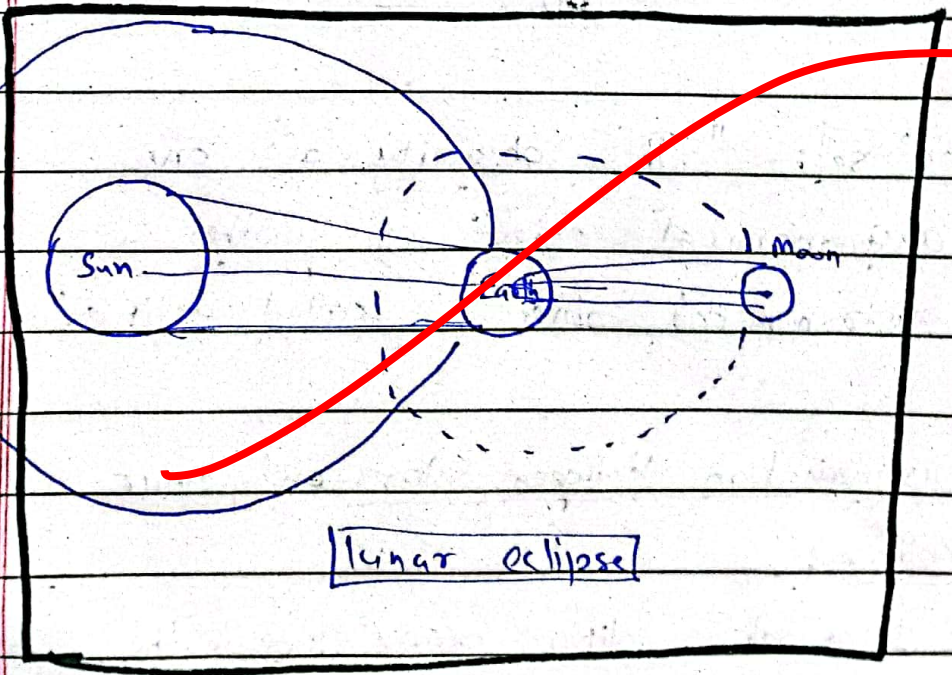
Distinction between Solar and lunar eclipse:

- 1) • Solar eclipse occurs when the moon comes between the earth and sun

and thus block the light from reaching the earth. Lunar eclipse occurs when Earth comes between the sun and the moon and this blocks the light from reaching moon.



Solar eclipse



Lunar eclipse

2- Solar eclipse occurs at day time

while lunar eclipse occurs at night

3- Solar occurs only for a few minutes

while lunar eclipse lasts for a few hours

4- Solar eclipse occurs every 18 months

while ~~lunar~~ lunar eclipse occurs occasionally