

PART - II SECTION - I

Q2

a) Climate finance is the need of developing countries as developing countries face the worse repercussions of climate change. Pakistan too, only contributes 1% to climate change yet it is one of the most affected countries of the world. Climate finance would help the affected countries to build resilience, so that they do not suffer heavy losses.

As COP-28 is set to begin in the UAE, it presents an important opportunity for discussions on climate finance. Developing countries often lack the necessary resources to address the challenges posed by climate change. Climate finance aims to bridge this gap by providing financial support for projects related to climate adaptation, mitigation, and capacity building.

During COP-28, it is expected that countries will discuss and negotiate various aspects of climate finance, including the mobilization of funds, transparency in financial flows and the fulfillment of existing commitments. Efforts to enhance climate finance may involve mechanisms such as the Green Climate Fund, which provides financial assistance to developing countries. It is crucial for developed countries to honor their financial obligations and support developing countries in their

efforts to address climate change effectively.

2B) FAT Soluble Vitamins

Fat soluble vitamins are those vitamins that are usually absorbed with the help of foods that contain fat. The excessive fat soluble vitamins are stored in livers and kidneys. Example of fat soluble vitamins are A, D, E and K.

Water Soluble Vitamins

Water soluble vitamins are those vitamins that are needed even with food and the excessive amount of water soluble vitamins consumed are excreted through urine as they cannot be stored. Example of water soluble vitamins are Vitamin C, E and Vitamin B which has 8 types such as Vit B1, B2, B3, B5, B6, B9, B12, B7.

Examples of Diets Containing Different Vitamins

A healthy and balanced diet will contain both fat soluble vitamins as well as water soluble vitamins. Any diet that has sufficient number of protein, carbohydrates, fats and vitamins according to the needs of the body would be considered as a healthy diet. The daily intake of vitamins can also be fulfilled by taking

tablets of multivitamins.

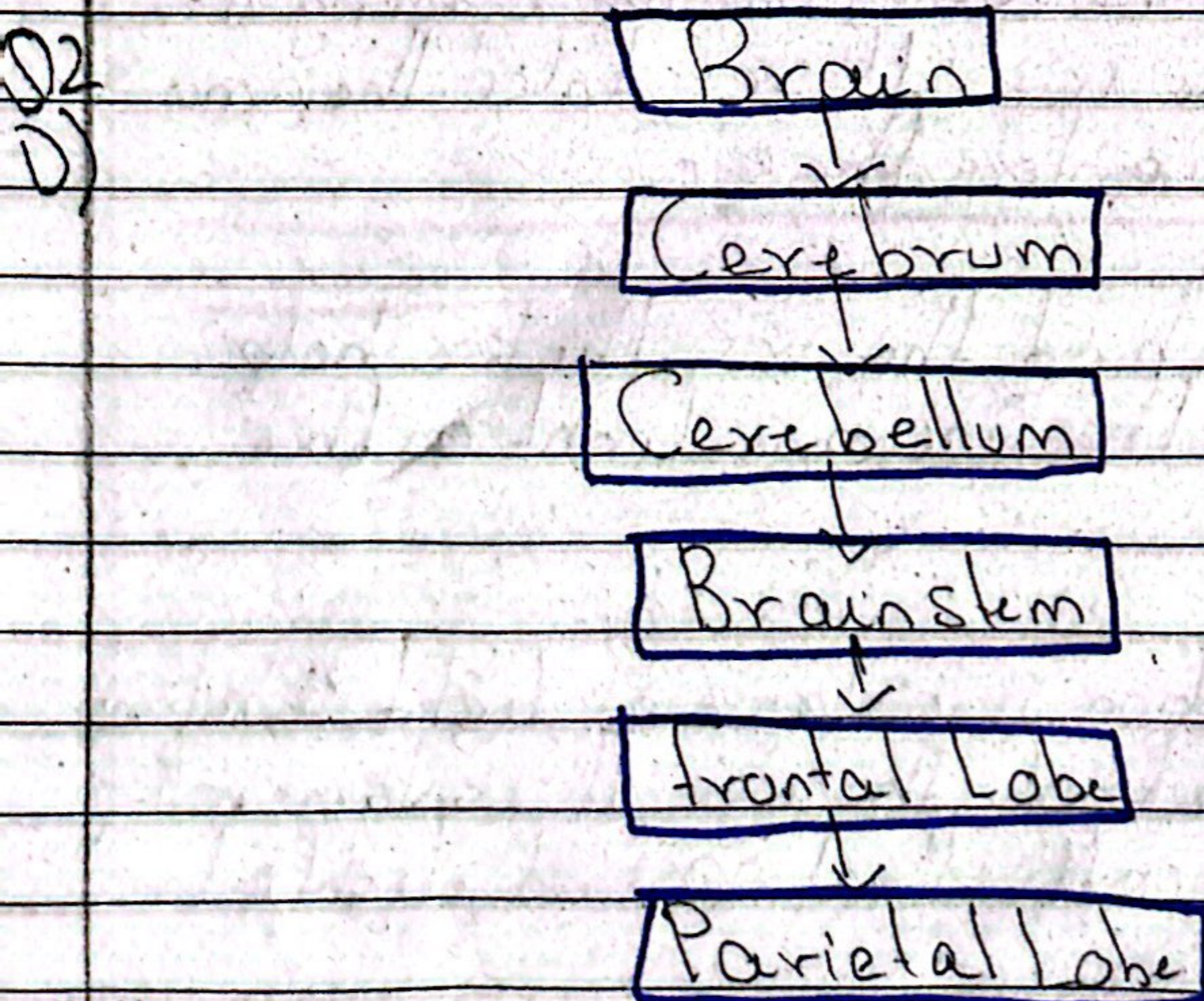
Human Eye

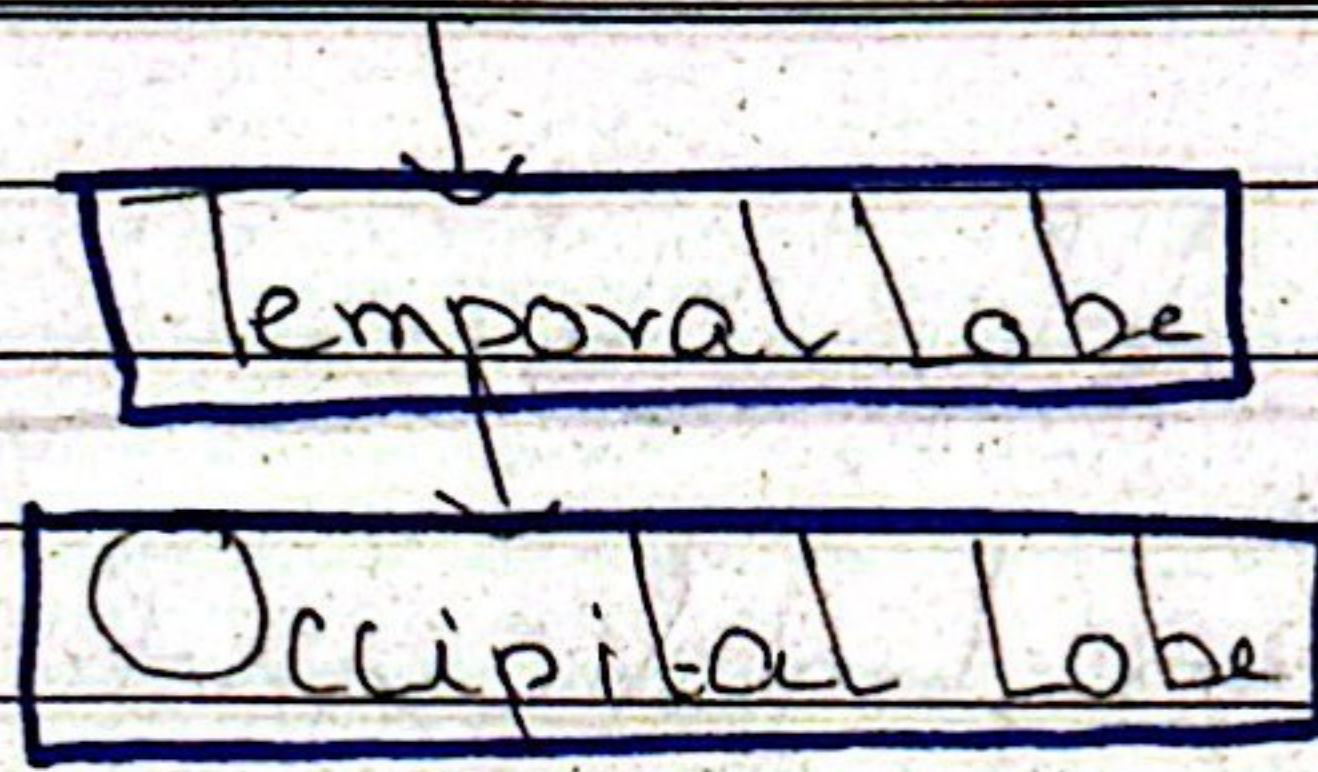
Our eyes are vital for seeing the world around us, but vision can be impaired by a number of medical conditions. The eye is a slightly asymmetrical globe, about one inch of diameter.

Structure of Human Eye

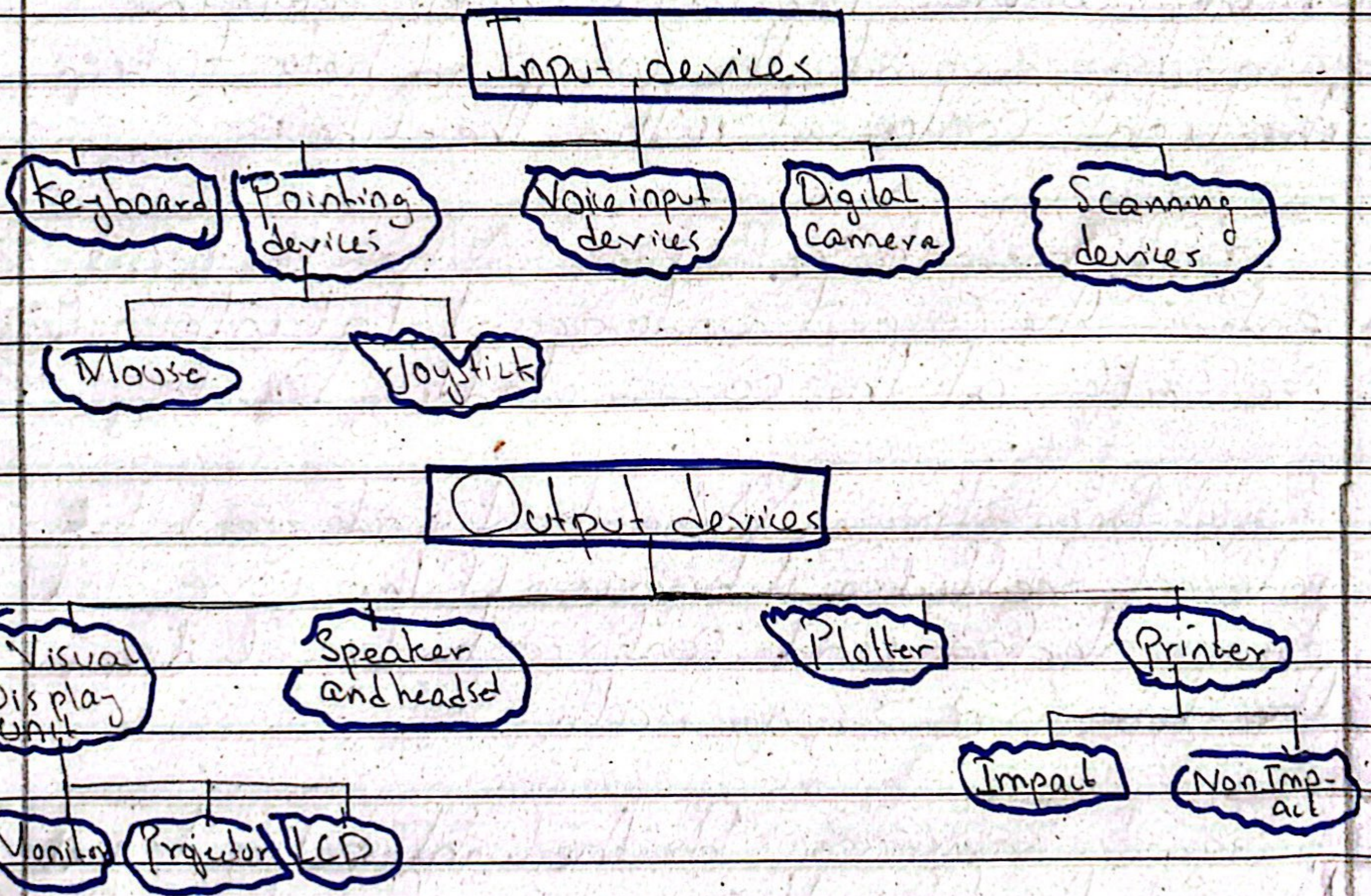
- 1) **Cornea:** The cornea is the transparent, dome shaped outermost layer of the eye. It helps to focus incoming light onto the lens.
- 2) **Iris:** Coloured part of the eye surrounding the pupil. It controls the amount of light entering the eye by adjusting the pupil.
- 3) **Pupil:** The pupil is the dark, circular opening at the center of the iris. It regulates the amount of light that enters the eye.
- 4) **Lens:** located behind the iris, the lens helps to further focus the incoming light on the retina.
- 5) **Retina:** The retina is a layer of light sensitive tissue lining the back of the eye. It contains millions of specialized cells that convert light into electrical signals.

- 6) **Optic Nerve:** Is a bundle of nerve fibers that carries the electrical signals generated by the retina to the brain for processing and interpretation.
- 7) **Macula:** Small spot near the center of the retina. Contains high concentration of photoreceptor cells called cones, which are responsible for detailed central vision.
- 8) **Vitreous Humor:** Vitreous humor is a gel-like substance that fills the space between the lens and the retina.
- 9) **Sclera:** It is the tough, white outer covering of the eye. Provides structural support to inner components.
- 10) **Conjunctiva:** Is a thin, transparent membrane that covers the front surface of the eye and the inner surface of the eyelids.



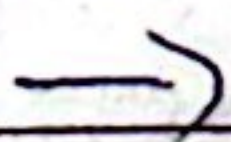


Q. Block diagram of input and output devices of
a) Computer



B) Optics

Optics can be anything that contains a glass tube. It can be used to transmit information as light pulse through hollow glass tubes. It has a total internal reflection for the passage of information.



How does an Optical fiber Work

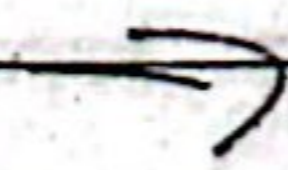
- 1) Light transmission: Light signals typically in the form of laser or LED-generated pulses, enter one end of the optical fiber.
- 2) Core and Cladding: The core is the inner part, where the light travels, while the cladding surrounds the core and helps to keep the light contained within the fiber.
- 3) Total Internal reflection: When the light enters the core it undergoes total internal reflection at the core-cladding boundary.
- 4) Light Propagation: When light undergoes total internal reflection it bounces off the core-cladding interface and continues to travel down the fiber in a zigzag path.
- 5) Signal Transmission: As the light pulses travel through the fiber, they carry information in the form of binary code (0s and 1s).

Q. Different methods of Solid Waste Management

Solid Waste Management is the systematic collection, transfer, treatment, recycling, recovery and disposal of solid waste.

Methods of Solid Waste Management

- 1) Landfill: Landfill is the digging of flat surface that can be used to dispose of solid waste. The land is dug in layers keeping in mind the conditions of the soil and the surrounding environment.
- 2) Incineration: It involves controlled combustion of solid waste at high temperatures. This method reduces the volume of waste and can generate (heat) energy in the form of heat.
- 3) Recycling: It involves the collection and processing of waste materials to produce new products.
- 4) Composting: It is the decomposition of organic waste materials, such as food scraps, yard waste, and certain paper products, into nutrient-rich compost.
- 5) Waste-to-Energy: Waste to energy technologies involve converting solid waste into energy, typically through anaerobic digestion.



GPS and GIS

1) Global Positioning System refers to finding the location of anything by the help of technology. The location can be found 24/7 whether the location is of Land Sea or Air. It uses time and velocity to determine exact location of anything. GPS is a U.S based, Russia has GLONASS, China Beidou.

GIS or Geographic Information System refers to the computer system capable of capturing, analyzing, storing and updating geographically referenced information. It shows a geographic picture of a location and further divides the location into many parts for better understanding of the geographic location. Even its uses are different than of GPS.

Section II

Q7 Total seats = 400

a) seats occupied = 325

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

81.25% of attendance

→

7
B) 30 person use 40kg of Sugar in 10 days

80 persons use 320kg Sugar in how many days

$$= \frac{80}{30} \downarrow \frac{40}{320} \downarrow \frac{10}{x}$$

$$\frac{30}{80} = \frac{40}{320} = \frac{10}{x}$$

$$30 \times 320 = 40 \times 80$$

$$40 \times 80 = 30 \times 320$$

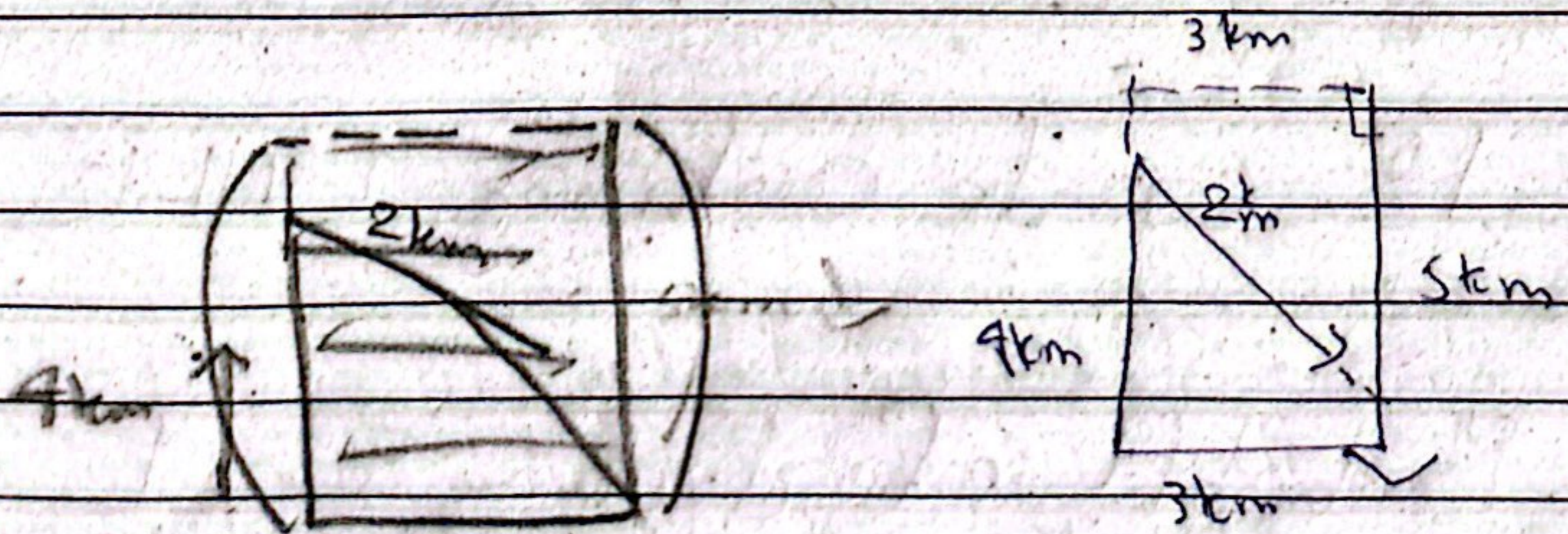
$$3200 = 9600$$

$$= \frac{9600}{3200}$$

$$= 3$$

$$3 = \frac{x}{10}$$

$$x = 30 \text{ days}$$



$$H^2 = B^2 + P^2$$

$$2^2 = B^2 + 3^2$$

$$9 = B^2 + 9$$

$$f = B^2 + 9$$

$$B^2 + 9 = f$$

$$B^2 = f - 9$$

$$B^2 = 5$$

$$B = 2.5 \text{ km}$$

He is 2.5 km away from his starting location

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

$$V = 3.142 \times 10^2 \times 3.6$$

$$V = 3.142 \times 100 \times 3.6$$

$$V = 3.142 \times 3600$$

$$V = 11,311.2 \text{ cm}^3$$

BROTHER \Rightarrow ODGISNOA

SISTER - ?

SISTER. CDLSOA

12 cards containing 1 till 12

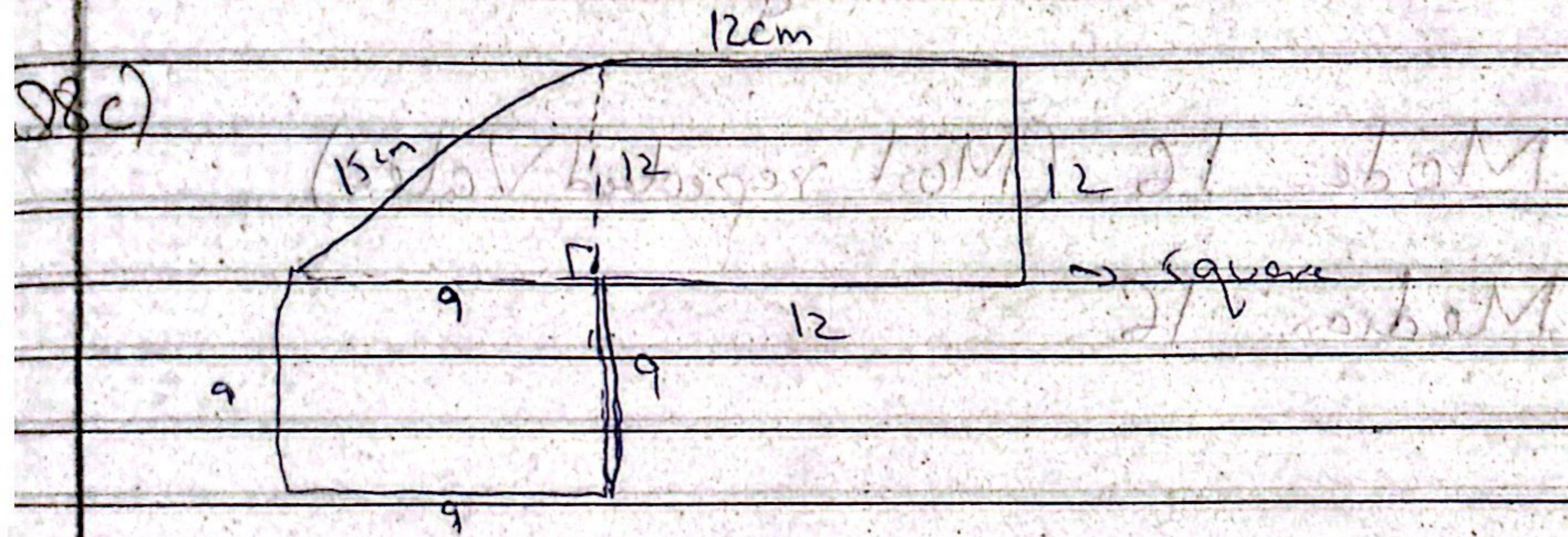
Probability of drawing 8 = $\frac{1}{12}$

An even number. $\frac{6}{12}$

ii) A perfect square, $\frac{2}{12}$

iv) Negative number, $\frac{0}{12}$

v) Number less than 13 = $\frac{12}{12}$



$$15^2 = B^2 + P^2$$

$$15^2 = B^2 + 12^2$$

$$225 = B^2 + 144$$

$$B^2 = 225 - 144$$

$$B^2 = 81$$

$$B = 9$$

Perimeter = Two Squares + One triangle

$$\begin{aligned} \text{Perimeter} &= 9 + 9 + 9 + 9 + 12 + 12 + 12 + 12 + 15 + 12 \\ &= 36 + 48 + 15 + 12 \\ &= 111 \text{ cm} \end{aligned}$$

Date:

8) 15, 15, 16, 16, 16, 17, 17, 18, 19

D) Range: $19 - 15 = 4$

Range = 4

Mean/Average = $\frac{15 + 15 + 16 + 16 + 16 + 17 + 17 + 18 + 19}{9}$

= $\frac{149}{9} = 16.5$ Mean

Mode = 16 (Most repeated Value)

Median = 16