SECTION I

QUESTION 2

Part a:

Difference b/w Climate and Environment

Different between environment and Climate is that climate mains its tempurature by exchanging energy with the environment. For instance, when water evaporate it dakes away the energy making environment cod, and when it condenses it releases energy making it warm.

Air Pollution:

Air pollution is the release of dangerous substance such as dust, fumes, gases, and chemicals in the air which causes acute and chronic harm to the living being. Deple-tion of the Ozone and global warming are the direct result of air pollution

Factors responsible for air pollution in Pakistan

1) Exhaust from cars/transportation vehicles:

Transportation vehicle (with combustion engines) release toxic goses in the air that causes air pollution.

2- Use of Insecticides, Pesticides and fertilizers:

Insecticides, Pesticides, and fertilizers when mixed releases ammonia which one of the most dangerous gas.

3- Exhaust from Industry and Power plants:

Industries and power plants produce huge amout of hydrocarbon, Sulphur dioxide, nitrogen dioxide and other gases that causes air pollution.

4- Mining:

During mining operations huge amount of dust and other chemicals are released in the air.

5- Paints, detergents, Solvents and aerosol sprays:

Paints, detergent, Solvents and aerosol sprays causes indoor air pollution.

Part b:

Vitamins are the Organic compounds need by the human body to function properly. Vitamins come from fruits and vegetables. Human body does not produce any vitamin.

Role of Vitamins in human body:

1- Vitamins are important for regulating metabolism of human body, by helping in digestion of fat, lipids and proteins.

2- Vitamins are the Cofactors in the production of Coenzymes that assist them in their working.

3- Vitamins are critical for formation red blood cells (RBCs), DNA, Neurons, mucus membrane etc.

4- Vitamins help the body maintain proper skin, teeth, bones and proper levels of calcium and phosphorous.

5- They also play an important role for clotting of blood.

QUESTION NO.3

Part a:

Buses:

Buses are the devices that are used for transferring data between different components of computers for communication between different component and they are used by CPU to communication to different devices within a computer System.

Types of buses:

There are three basic types of buses that are employed in a computer system. They are:

1) Data bus
2) Address bus
3) Control bus.

1- Data bus:

Data bus is the most common type of bus in a computer system. It is used for transferring data between different components in computer systems. It consists of 8, 16, 32, 64 line.

the number of line indicate the data that can be transfe-red at one time. For example 64 line data bus can transfer 64 bits of data at one time. Data bus is bi-directional it ~~takes~~ receives and send information from CPU.

2- Address bus:

Address bus is used to identify various components in a computer system and help them communicate. Every component in a computer system has a unique address assign to them. Address bus multiplex the data bus, without address bus data bus can not access storage or io devices. Address buse is unidirection, it takes data from CPU to other Components of computer.
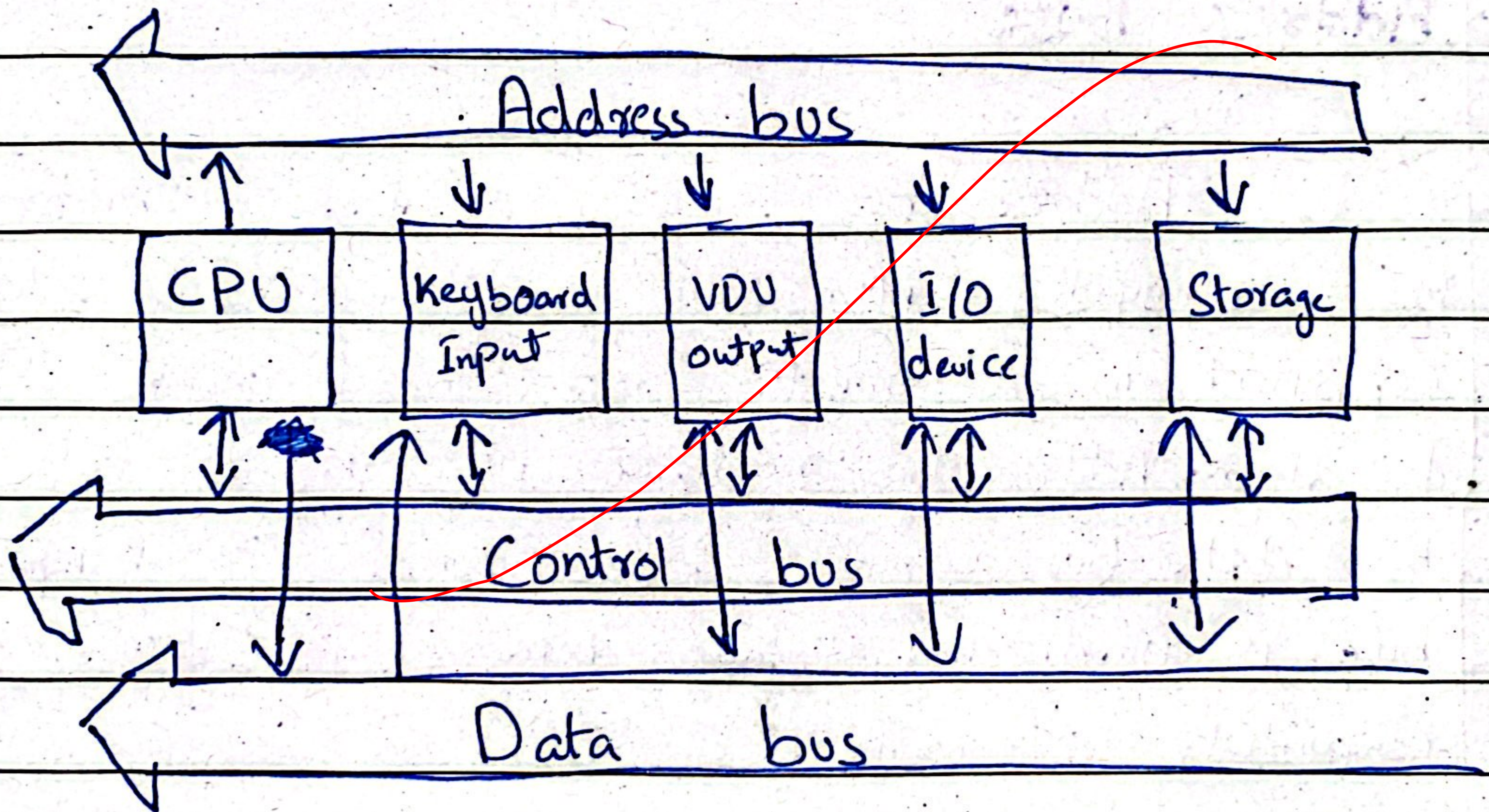
Control bus:

Control bus is used by CPU to ~~identify~~ communicate with various ~~computers~~ ~~components~~ devices had in a computer system. This happens through physical cable or a printed circuit. Control bus transmits ~~different~~ direct control signals to both internal and external devices. Direct control Signal contains bit enable lines, fault line, read/write lines and status. The signal contains following data:.

Timing Information :- It specifies the time in which data bus and address bus can access components

Command Information :- It specifies the command that is supposed to be carried out.
Control bus is bi-directional.
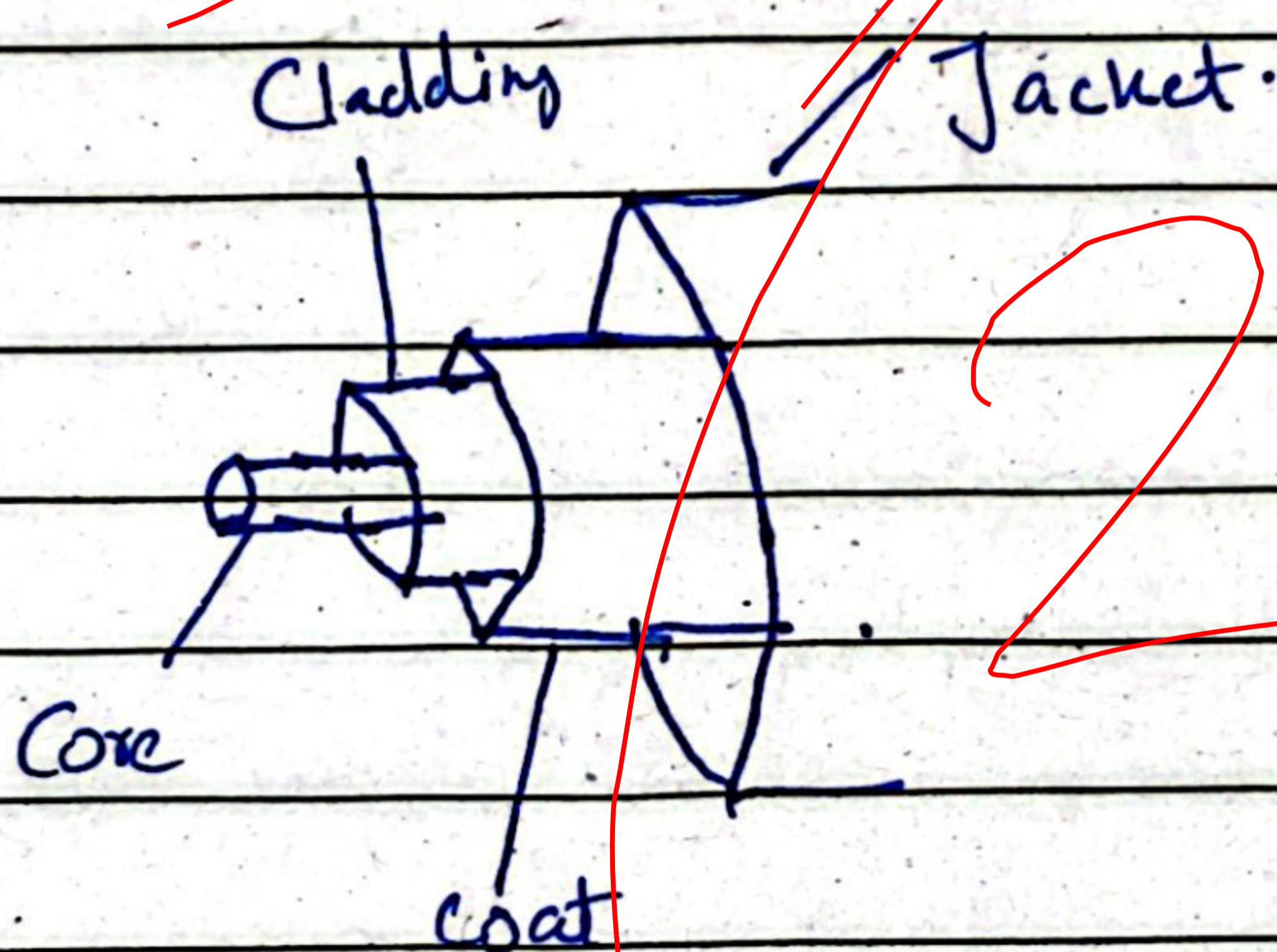

Part b:

Fiber Optic:

Fiber optic is a technology associated with transmission of information as light pulse over a long distance along glass, fibre or plastic.

Structure of fiber optic:

Fiber optics consists of four layers:-

1- <u>Core</u> it is made up of glass.

2- <u>Cladding</u> it is a ~~reflective~~ refractive material made up of glass, or plastic.

3- <u>Core</u> as a protective layer.

- <u>Jacket</u> to bundle all fibres together

Cladding
Jacket.
Core
coat

Working of fibre Optic:

    In fibre optic system, transmitter turns information into light and sends it through fiber optic, as light travel through fibre optic at a high speed, it bounces off the cladding either as a result of total ~~refraction~~ reflection or continuous reflection.

    If there is a curve or a bend in a fibre light will bounce off the cladding. It can follow the cladding by turning the corners.

    At the end of the fibre receiver receives the light and turns it into information, i.e. photo, music, code etc.

Part c:

1. HYPOCENTER:

Hypo-center is the place where the earthquake accures. It is under the surface of Earth. It is below the epicenter.

2- EPICENTER:

Epicentre is the location of the earthquake It is on the surface of Earth. It is above hypocentre.

3- Magma:

Magma is a red hot liquid, it consists of molten rocks and is present in a valcano. Once magma flow out of valcano it is called lava.

Part d:

Big Bang:

Big bang theory is most widely accepted theory about the origin of universe. Big bang suggests that their was nothing, which exploded, its explosion is

called the big bang. Since the big bang Universe is expanding. Sun, Stars, planets, galaxy and everything else formed during the expansion.

SECTION II

PART a:

Radius of cylinder = 8 cm

　　 " 　 height = 15 cm

　　　　 Volume = ?

Sol:-

$$V = \text{radius} \times \text{height}$$

$$= 8 \times 15$$

$$V = 96 \, cm^2$$

Volume of cylinder is 96 cm².

Part b:-

Angle of hexagon = 135°c

Part c:

Data 　　 lenght = 4.6

　　　　 depth = 4.6

　　　　 Width = 2.2

Surface area = ?

Surface area = lenght × depth × width
        = 4.6 × 4.6 × 2.2
        = 46.552

$$\boxed{\text{Surface area} = 46.552}$$

PART d:

Height of house = 10 m
Height of ladder = ?
Base of ladder = 3m away.

Height of ladder = Base + total height of house
                 = 10 + 3
$$\boxed{\text{height of ladder} = 13 \text{ metre}}$$

QUESTION 7:

Part a:

3/5 = 0.6
5/3 = 1.66

$\frac{1}{} \times 0.6 = 0.6$
$\frac{1}{} \times 1.66 = 1.66$
1.66 - 0.6 = 1.06
∴ 1.06 = 106%

Part b:

Data:

Chocolate to ice = $5:8$

No. of chocolate = 30

find icecream =

$$= \quad \overset{1}{\cancel{8}} : 8 \\ \underset{6}{\cancel{30}}$$

$$\boxed{= 48}$$

Icecream cone will be 48

Part c:

Table = 30 mg

No. table for 240 mg = ?

Sol :

$$= \frac{240}{30}$$

$$= 8$$

Mr. smith need 8 tablets for 240 mg medication.

Part d:

Average of 50 number = 20

number = 37 and 43 discarded

Sol:

Number = 50×20

= 1000

= 1000 - 37

= 963 - 43

= 920

Average of remaining numbers = $\dfrac{920}{48}$

= 19.16