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## Section - II

### Question # 7

(a).

Price of one scooters = 96000

Women sold two scooters =  $96000 \times 2$   
= 192000

In the sale of first scooty:

Women got 20% profit

$$= 96000 \times 20\%$$

$$= 96000 \times \frac{20}{100}$$

$$= 19200 \text{ Rs profit}$$

Profit from first scooty =

$$= 96000 + 19200 = 115200 \text{ Profit}$$

Sale of the Second Scooty:

Women got 20% loss

$$= 96000 \times 20\%$$

$$= 19200 \text{ Rs loss}$$

Loss from Second scooty

$$= 96000 - 19200 = 76800 \text{ Remaining amount after loss}$$

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Women gain 115200 in profit and 76800 in loss which shows 20% profit and 20% loss. In simple, she receive neutral amount with no profit and no loss.

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(b) Suppose finding men =  $x$

| Men   | Hours | days |
|-------|-------|------|
| ↑ 195 | ↑ 10  | ↓ 20 |
| ↑ $x$ | ↓ 13  | ↓ 15 |

$$\frac{x}{195} = \frac{13}{10} \times \frac{20}{15}$$

$$x = 13 \times \frac{2}{15} \times 195$$

$$x = 338$$

338 men required to complete the work in 13 hours and 15 days

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(c)

$$A = \{a, e, i, o, u\}$$

$$U = \{a, b, c, \dots, z\}$$

$$A' = ?$$

$$A' = U - A$$

$$= \{a, b, c, \dots, z\} - \{a, e, i, o, u\}$$

$$A' = \{b, c, d, f, g, h, k, l, m, n, p, r, s, t, v, w, x, y, z\}$$

(d)

Square pyramid has volume =  $372 \text{ cm}^3$

$$\text{Height} = 3 \text{ km}$$

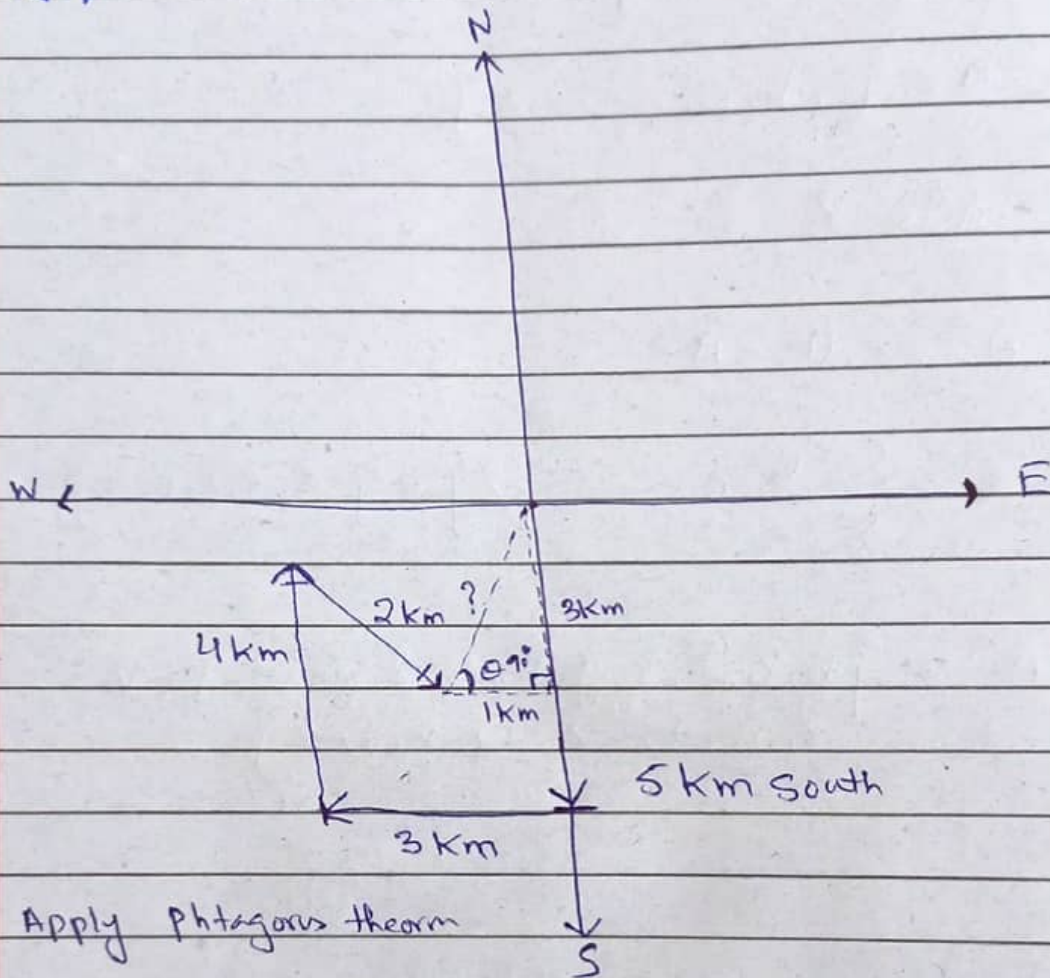
Perimeter of its base = ?

$$\text{to find single side} = \frac{372}{3} = 124$$

$$\text{perimeter of its base} = 124 \text{ cm.}$$

## Question #8

(a)



Apply Pythagoras theorem

$$(\text{Hyp})^2 = (\text{Base})^2 + (\text{Perp})^2$$

$$(\text{Hyp})^2 = (1)^2 + (3)^2$$

$$= 1 + 9$$

To avoid square, taking square root on both side and cut square with square root

$$\sqrt{(\text{Hyp})^2} = \sqrt{(1)^2 + (3)^2}$$



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$$(hyp) = \sqrt{(1)^2} + \sqrt{(3)^2}$$

$$(hyp) = 1 + 3$$

$$\boxed{hyp = 4}$$

It means distance of cow is 4km away from its initial point.

(b)

Division of pizza = 8 slices

raisin slices = 3 slices

not raisin slices = 5 slices.

Probability of raisin slices taken by Shiza

$$\text{Probability (raisin slices)} = \frac{\text{No of raisin slices}}{\text{Total no of slices}}$$

$$\text{Probability (raisin slices)} = \frac{3}{8}$$

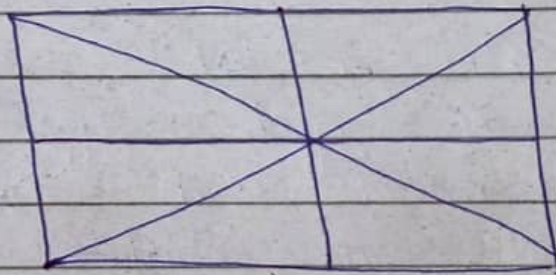
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Chances of Shiza taking the  
raisin slices are  $\frac{3}{8}$

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(c)

Number of triangles = ?



→ As total sides of triangle  
is 3 all the times.

→ In above diagram total division  
of boxes are 8

→ So to find number of  
triangles =  $8 \times 3$

$$= 24$$

Total triangles in this are 24

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(d)

## Factors that can <sup>affect</sup> IQ

As ~~we~~ IQ or intelligence quality is usually the major important factor of a person that can be affected due to following factors.

Neglecting the focus:

One of the major factor due to which IQ is affecting called neglecting the focus from the conceptual or theoretical work. Due to this person thinking and reasoning capacity become decline.

Continuous over thinking:

Overthinking is one of the crucial factor in affecting the IQ of a person. Because due to continuous overthinking, a person is unable to do quality thinking. Due to this his/her IQ become gradually decline.

Excessively use of mobile phone:

Due to excessive use of mobile phone, person is unable to manage his thinking. Due to using a lot of time he/she is editing to not thinking naturally. In the result, the person IQ become affecting.

Do not practice critical thinking:

IQ is not the game of single day. It takes practice to mature the person brain power. It's major source is critical thinking regarding all the thing. But, if a person not doing the practice of critical thinking, his or her IQ affected gradually.

Lack in knowledge:

An other name of IQ is to transfer knowledge into reasoning. If a person is not acquire knowledge, he/she not be able to think critically and enhance his or her IQ skill.



Section - IQuestion # 5

(a)

Distinguish between RAM and ROM

| RAM   | ROM  |
|---|--|
| ① RAM stands for Random access memory.                                | ① ROM stands for Read only memory.   |
| ② It is volatile memory.  | ② It is non-volatile memory.   |
| ③ It stores random memory, while operating system require to operate. | ③ It contain memory that can read only while operating system is starting. |
| ④ It can read and write information.                                  | ④ It can only read information.  |
| ⑤ It's memory removed while power breaks.                             | ⑤ It's memory remain stable while power break.                             |
| ⑥ It has multiple sub divisions like E-RAM, EP-RAM etc.               | ⑥ It has no any other sub-division.  |

Nibble:

Nibble is define as an outer storage of information. It's



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basic purpose is to send or transfer data from one and another computer. The draw back of nibble is that it can transfer data in very less form. ~~for~~ amount, like kilo bytes, or less than it.

## USB:

USB stands for Universal serial bus. It is modern day technology that is used to transfer data from one computer to another computer or device. The major benefit of USB is that, it can transfer data in major packets. like it range starts from kilo byte (kb) to Tera bytes (TB). It is major use in computer now a days.

(b)

AI ~~is~~ has revolutionized the world:

AI stands for Artificial Intelligence is modern day revolutionized technology in the world. It is revolutionized in



the following way:

### Help in medical surgery:

Now AI technology is revolutionized that it helps not only in medical field but also in surgery field. It's latest exple example is doctors used AI technology in Karachi for surgery of the patient according to DAWN sources. The critical and complex medical surgery now a days done on the concepts of revolutionary AI technology.

### Blessing in the field of Education:

Education, now a days, easier due to advancement of AI technology. Because AI facilitates not only students but also teachers. It's common example is open AI, or Chat GPT due to this students and teachers are very relax after the teaching of CHAT GPT.

## AI Help to Strengthen Judicial System:

Judicial system is one of the crucial pillar of any nation. AI plays its vital role in strengthen Judicial System. According to Express Tribune, a judge from session court of Dera Ismail Khan, Pakistan, use open AI, CHAT GPT to solve the case of Jurivile. This mean AI is also revolutionary in the field of Judiciary.

## Helping in Security Surveillance:

AI is using in the field of security surveillance by the At Police and law enforcement agencies, which are the common in safe city cameras ~~is~~ used by the Lahore and Islamabad safe city cameras. This technology helps to identify criminal in better way.

## Conclusion:

AI is the revolutionary technology that not only help in

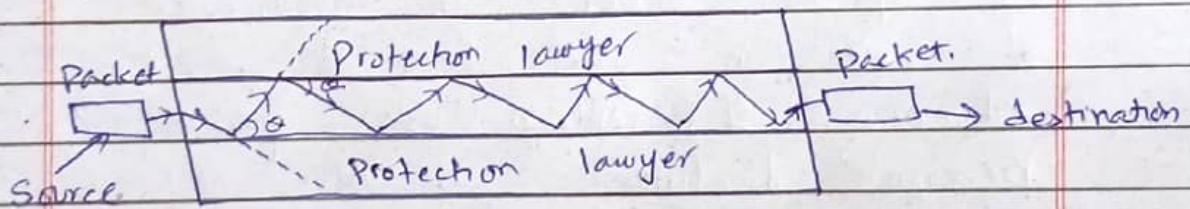


computer science but also in the field of medical, judiciary, education and security as well.

(c)

### Working of Optical fiber:

Optical fiber is state of the art technology that is used to transfer data from source to destination.



(i) → Here, according to diagram, an optical fiber lawyer is used to strengthen the optical fiber.

(ii) → Data from source enter into the optical fiber with the form of light.

(iii) → This data is not usually move straight from source to destination.

(iv) → This packet start collision with

the walls of the optical fiber and form an angle.

(v) With following the angle data is transferred to the destination

### Advantages of optical fiber:

There are many advantages of ~~AT~~ optical fiber now a days. Some are in the following.

#### Very less drop of Packats:

Due to strong wall of optical fiber and transfer of data in the form of light, chances of drop of packet become decline.

#### Cost-effective:

Optical fiber is cost effective as compare to single copper wire and double copper wire. Because single and double copper wire loss of packet is very high. But in optical fiber this collision is very less that's why it is very cost effective.



## Speed of optical fiber:

One of the major advantages of optical fiber is its speed. It is high speed. In other words it is lightning speed to transfer data from source to destination.

(d)

## Critical speed of a Satellite:

Satellite is the source of communication through internet. Speed of satellite is three times less than the speed of earth around the sun.

satellite speed =  $\frac{1}{3}$  of the speed of earth around sun.

### Geo-Stationary

(i) → Geo-Stationary satellite is the satellite which is used to manage the communication among the devices of earth or geo.

(ii) → geo-stationary satellite used for ordinary purpose

### Polar Satellite

(i) → Polar satellites are the satellites which is used to manage the information of solar system or galaxy to the earth.

(ii) → Polar satellite used for special purpose



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(iii) Used to send information from one device to another

(iv) Used to send information of the space to the earth.

(v) Used for communication purpose, in office email, messages

(vi) Used for secret purpose by the Aerospace agencies.

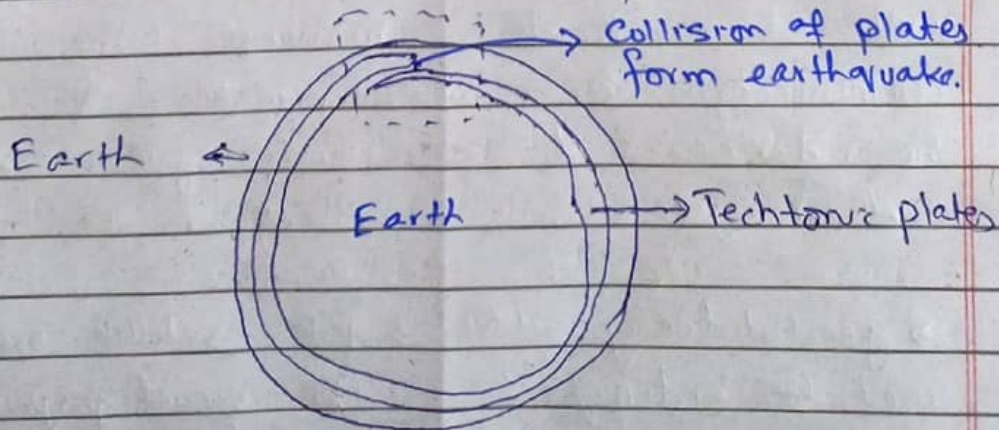
### Question No. 4

(a)

#### Generation of earth quakes:

Earth quakes are generated usually because of movement of tectonic plate.

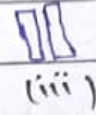
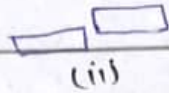
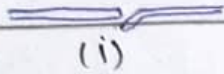
These plates are spreaded under the whole earth. When these plates are collide with each other earth quake formed.





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These plates are usually three types



Due to these plates usually earth quake formed. The combination of these three layers are at the sea of Japan, where majority of earth quakes are taken place.

### Tsunami:

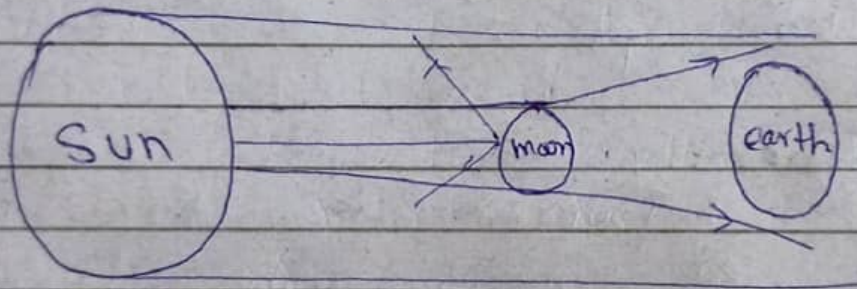
Tsunami is the Japanese word. It means the disaster under the water. When these plates are collide with each other under the sea then sea waves are ~~becom~~ become stronger, due to this the large waves of Tsunami are generated. Maria Trench in Pacific region of ocean is also formed in the collision of earthquake and Tsunami.



(c)  
Distinguish Solar & Lunar Eclipse

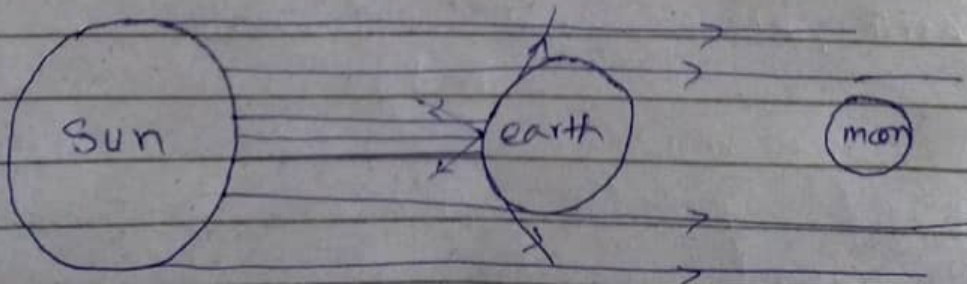
### Solar Eclipse

When moon comes between the earth and the sun, then solar eclipse formed. Due to this waves or rays of sun does not directly comes to the earth.



### Lunar Eclipse:

When earth is comes between the orbit of sun and moon, then Lunar eclipse become occurred. Due to this ~~the~~ sun light not fully go to the moon surface.





(d)

## Doping in Semi-Conductors:

Semi-conductor is the medium between conductor and insulator. It is formed with the low density of molecules.

Doping in semi-conductor help in the way manage the state of semi-conductor. It is the basic duty of doping to give charge positive and negative on the semi-conductor.

## Different types of Ceramics:

Following are the types of Ceramics

### P-type Ceramics:

P-type Ceramics are the ceramics which are positively charged particles. It is the major source of positive charge particles or molecules

### N-type Ceramics:

N-type Ceramics are the ceramics which are negatively charged particles. It's its base purpose to provide negative charge to semiconductor.

(b)

### Coriolis Forces:

Coriolis forces are the forces between static and dynamic position of a body which helps it to move ~~for~~ in any direction.

### Hurricanes are generated:

Hurricanes are generated due to the Coriolis forces which give the direction of a body to move from one state to another state. It is natural form of Coriolis forces.

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