

## PART II

### Question 3

A. How do you see ----- warming?

1. Introduction:

The 27<sup>th</sup> United Nations Climate Change Conference (COP27) held in Sharm-El-Sheikh, Egypt at the end of a year that saw devastating floods and unprecedented heatwaves, severe droughts and formidable storms. These climate emergencies led to the setup of "loss and damage fund", long term climate finance and review of "Gender Action Plan" (GAP) for COP28. The COP28 held in UAE dealt with agendas such as energy and finance, health, trade and relief, recovery and peace. But the main focus of COP28 remained the mobilization of climate fund. The "Adaptation Fund" secured new pledges under climate finance worth \$174 Million with new commitments focusing least developing countries.

## 2. Developments in COP 28 in regards to climate fund as compared to COP 27:

### ①. Green Climate Fund (GCF):

Six new pledges with \$3.5 billion under GCF were made for replenishment of world's most vulnerable communities and least developing countries - GCF is the world's largest climate dedicated fund, towards a climate-resilient future.

### ②. Enhanced financial support under "Loss and Damage Fund":

The established loss and damage fund (LDF) in COP 27 lacked mechanism but COP 28 approved framework for climate finance for poorer countries to deal with global warming like Pakistan.

### ③. Climate finance pledges under COP 28:

The host country, UAE, pledged \$50 billion for climate friendly projects especially for

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### 3. Conclusion

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Global South - Under LDF, total contributions were around \$720 Million -

### 3- Conclusion :

COP 28 unlocked innovative financial mechanism for climate recovery especially focusing on vulnerable countries - It was a huge development, specifically Loss and Damage fund, considering the climate urgency -

## B. Describe input - - - briefly.

### 1. Introduction :

Input devices and output devices are used in the functioning of computer to give instructions, transfer data and control signals etc. Input devices such as mouse, keyboard, scanner, etc transfer data to the processing system. Whereas Output devices i.e. speaker, printer, monitor etc give out the results after processing.

## 2. Input devices:

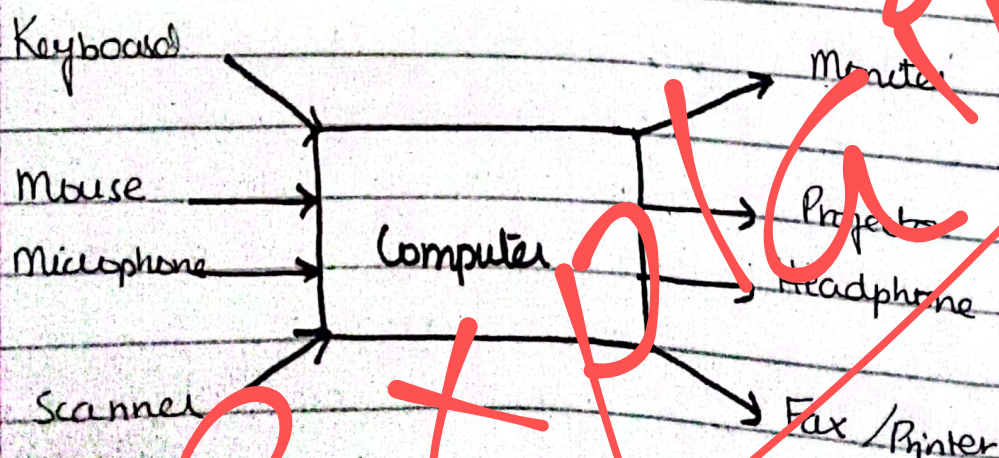
"A piece of hardware which helps enter / transfer data into the computer is called input devices."

### ①. Keyboard:

A simple device containing keys denoted by alphabets, numbers etc to give instructions to computer.

### ②. Mouse:

A pointing device to click on different icons etc commanding the computer to operate accordingly.



### 3 Output devices:

" A piece of equipment which gives out the processed data / input after conversion from machine to human language is called output device "

#### ① Monitor :

A device which facilitates the display over a screen is called a monitor.

#### ②- Printer :

A device which makes a copy of any content i.e. text, picture etc. on the command forwarded by the computer.

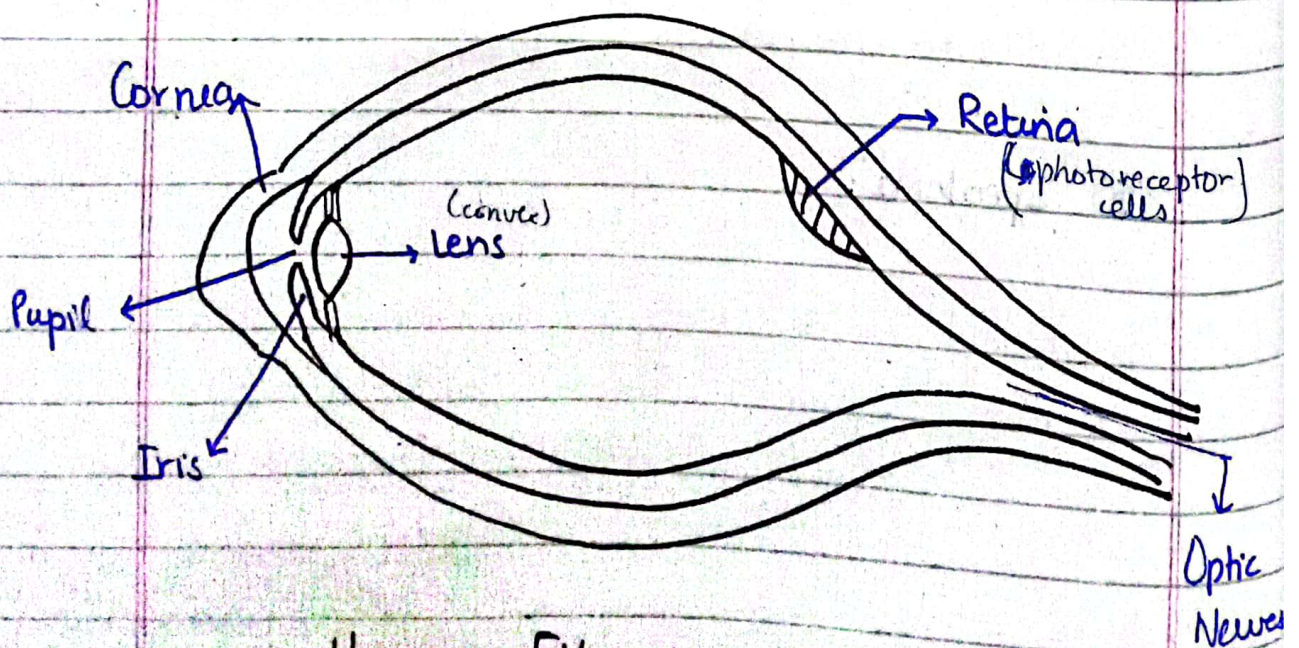
#### ③ Speakers :

A device through which electronic signal is converted into sound waves in order to listen on computer's command.

## C. Discuss functions of eye.

### 1 Introduction:

An eye is an organ of human body that facilitates the sense of sight. Light enters through cornea and pupil constricts to limit the light, the Iris controls the amount of light and lens converges the light signals on retina which then generates an inverted image. These electric signals converted from light signals are sent to brain via optic nerves and that generates the vision of object.



∴ Human Eye

## 2: Functions of different parts of eye.

### ① - Cornea :

Cornea is the transparent outer part of eye which covers Iris and filters the light entering the pupil from outside.

### ② - Pupil :

Pupil is the round opening in the center of the iris which constricts or dilates to adjust the amount of light entering the eye. It constricts if <sup>exposed to</sup> excess light and vice versa.

### ③ - Convex lens :

Convex lens converges the light from outside in the center to fall on retina -

### ④ - Retina :

Photoreceptor cells in retina convert light signals into electric signals to build an inverted image of the object and transfer to brain via optic nerves.

## D. Discuss different causes - - - pollution.

### 1. Water pollution:

"Water pollution is a global environmental phenomenon in which water bodies are contaminated directly or indirectly by pollutants like chemicals, fertilizers etc."

### 2. Causes of water pollution:

#### ① Domestic waste:

The microorganisms and pollutants in domestic sewage is the major source of contamination of water bodies. Poor sewage system in cities poses a threat to water quality.

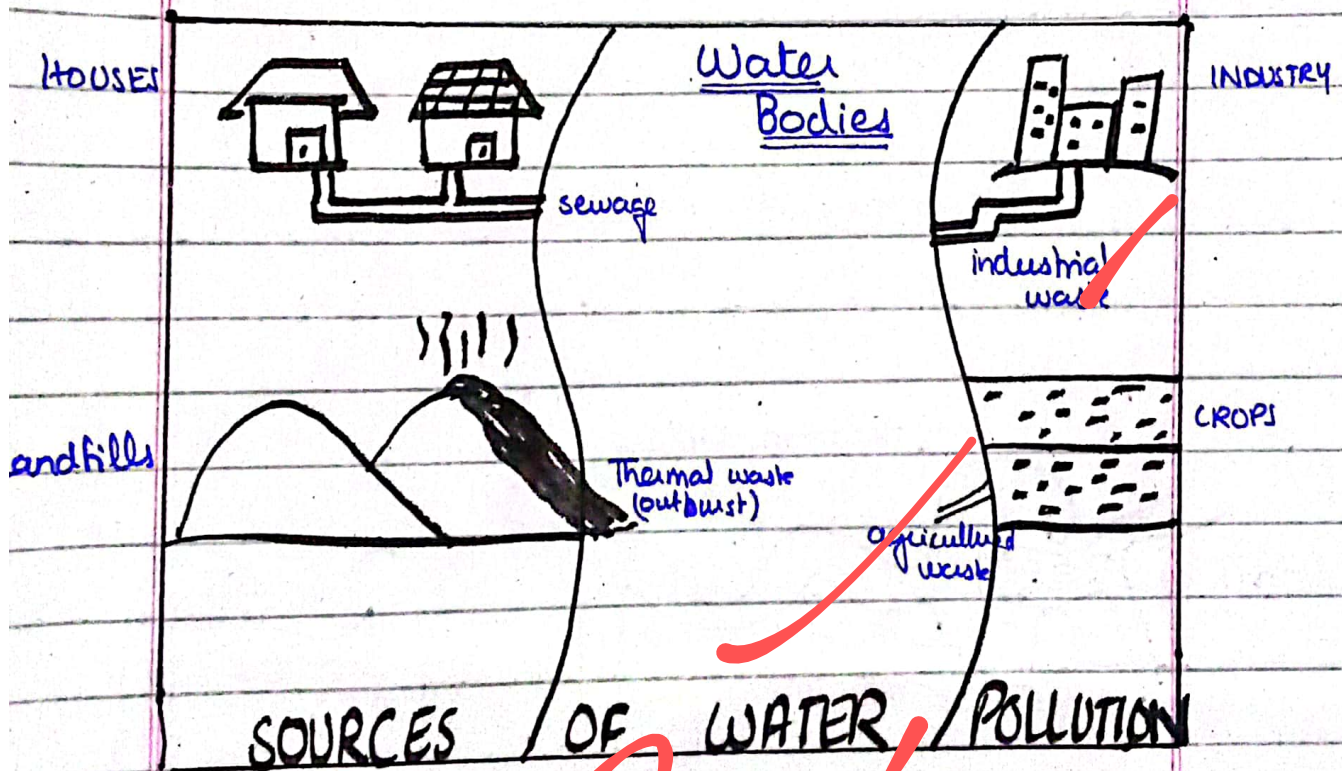
#### ② Solid waste:

Solid waste like garbage, electronic waste, trash etc are improperly disposed off leading to industrial and commercial waste in water, making it toxic for marine life as well as human.



### ③ - Toxic industrial waste:

Industrial discharge containing mercury, lead, copper, zinc etc make the water bodies toxic, poisonous, radioactive and even explosive. The carcinogenic properties of lead and cadmium poses a threat for aquatic life and human bodies.



### ④ - Thermal pollution:

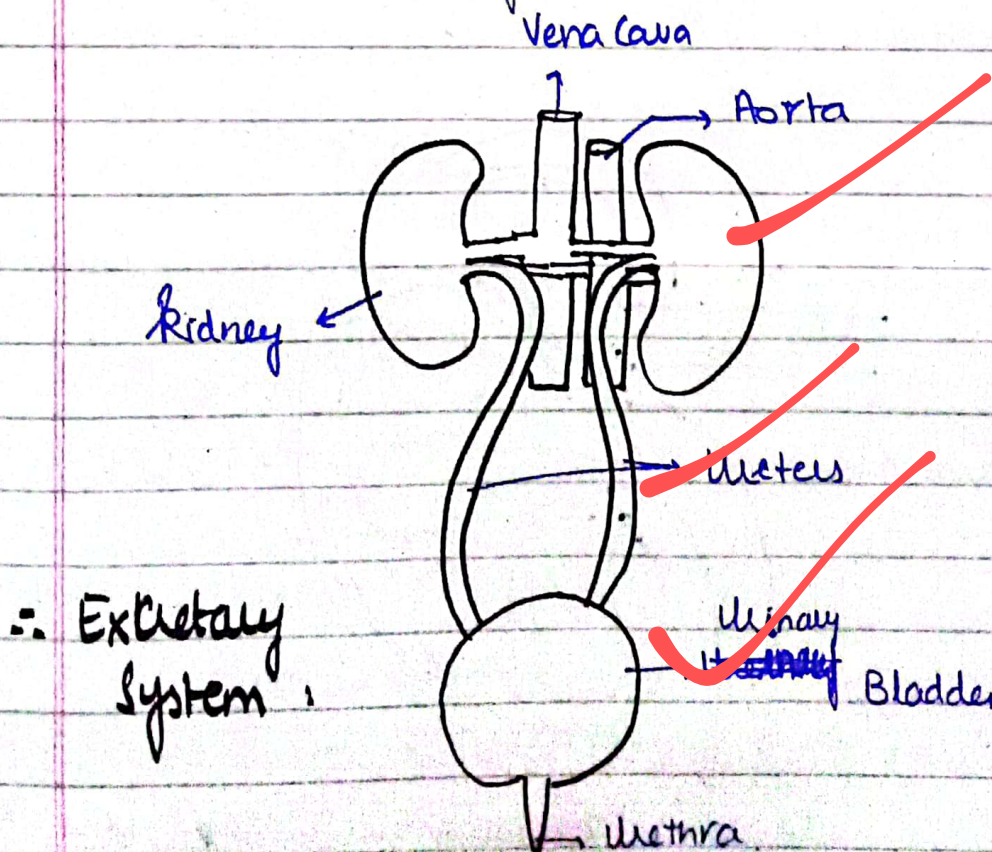
The rise in temperature of water from outbursts of landfills and industrial activity impacts marine life and causes water pollution.

# Question No. 5

A. Discuss structure - - - - system.

## 1. Introduction:

Excretory system is the body's waste disposal system which eliminates excessive waste products from body. A pair of kidney is a vital organ for excretion of waste metabolic products as it allows the exchange of waste between blood and into bladder through a nephrons.

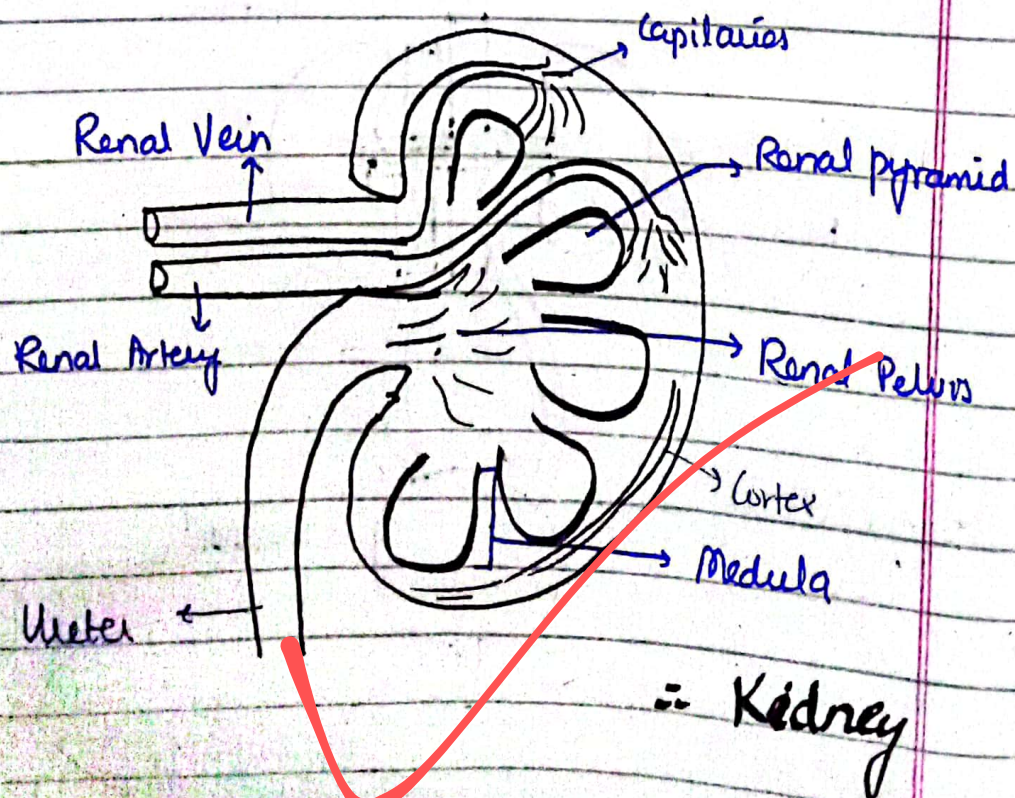


## 1. Structure of Kidney:

A kidney is a bean shaped organ which facilitates excretion through its functional unit i.e. Nephron. A pair of kidney in human body, one on each side of abdominal area is located and weights less than 1% of body weight.

### ① Medulla :

The inner pyramid shaped region is called medulla. It spreads throughout kidney.



(ii) Cortex:

Cortex is located in the outer lining of kidney and is made of nephrons, like medulla.

(iii) Ureter:

Ureter is a tube which carries excessive metabolic waste from kidney to store temporarily in urinary bladder.

B. Discuss different CPEC.

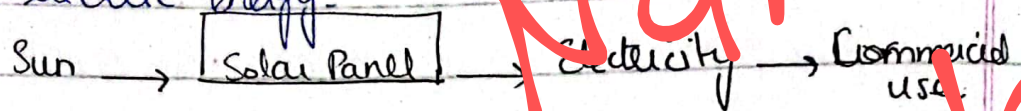
Introduction:

The China Pakistan Economic corridor has promoted green and sustainable development through renewable energy production using wind, solar energy and water etc. Different projects like Quaid-e-Azam Solar Park and Jhimper wind Power projects, Azad Pattan Hydropower project etc are currently underway.

## 2. Renewable energy sources under CPEC:

### ① Solar energy:

Solar energy is generated when heat waves (solar waves / UV radiation) are converted through photovoltaic cells into electric energy.



### ② Wind energy:

Wind is used to generate mechanical energy / power through big wind turbine which convert mechanical power into electricity with a generator.

### ③ Hydropower energy:

Water flow is used to generate electric energy through dams where turbine rotates with water flow and generator produces electricity. Azad Pattan Hydropower project under CPEC is an example.

## ④ Geothermal energy:

The energy generated from trapped heat under the surface of Earth through a streamer, turbine and generator is geothermal energy. Under CPEC, geothermal projects are being discussed for Thar region to generate electricity.

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## C. Discuss different . . . . . body.

### 1. Structure of Human Cell:

Cell is the structural and functional unit of life. It is composed of three parts. A human cell consists of an outer membrane for protection of inner organelles and a nucleus. The cell organelles in human cell are a nucleus, mitochondria, ribosome, golgi apparatus, endoplasmic reticulum and lysosomes.

### ① Plasma / cell membrane:

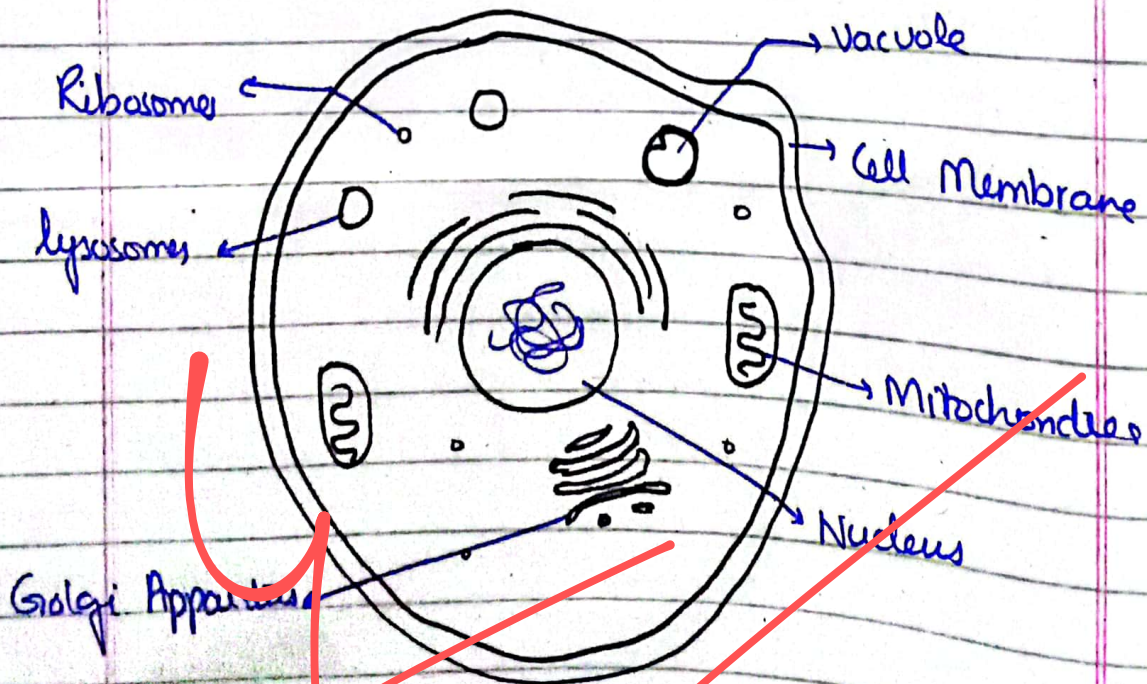
The outermost covering of cell for protection is called a plasma membrane. It is composed of different molecules i.e. lipids, fats, proteins, carbohydrates etc.

### ②. Mitochondria:

The powerhouse of a cell is called mitochondria which is a finger like structure.

### ③. Nucleus:

The central structure which carries hereditary material in a cell.



#### ④ - Endoplasmic Reticulum:

The extending network of nuclear membrane which some-times carries ribosomes is called endoplasmic reticulum.

#### ⑤ - Golgi Apparatus:

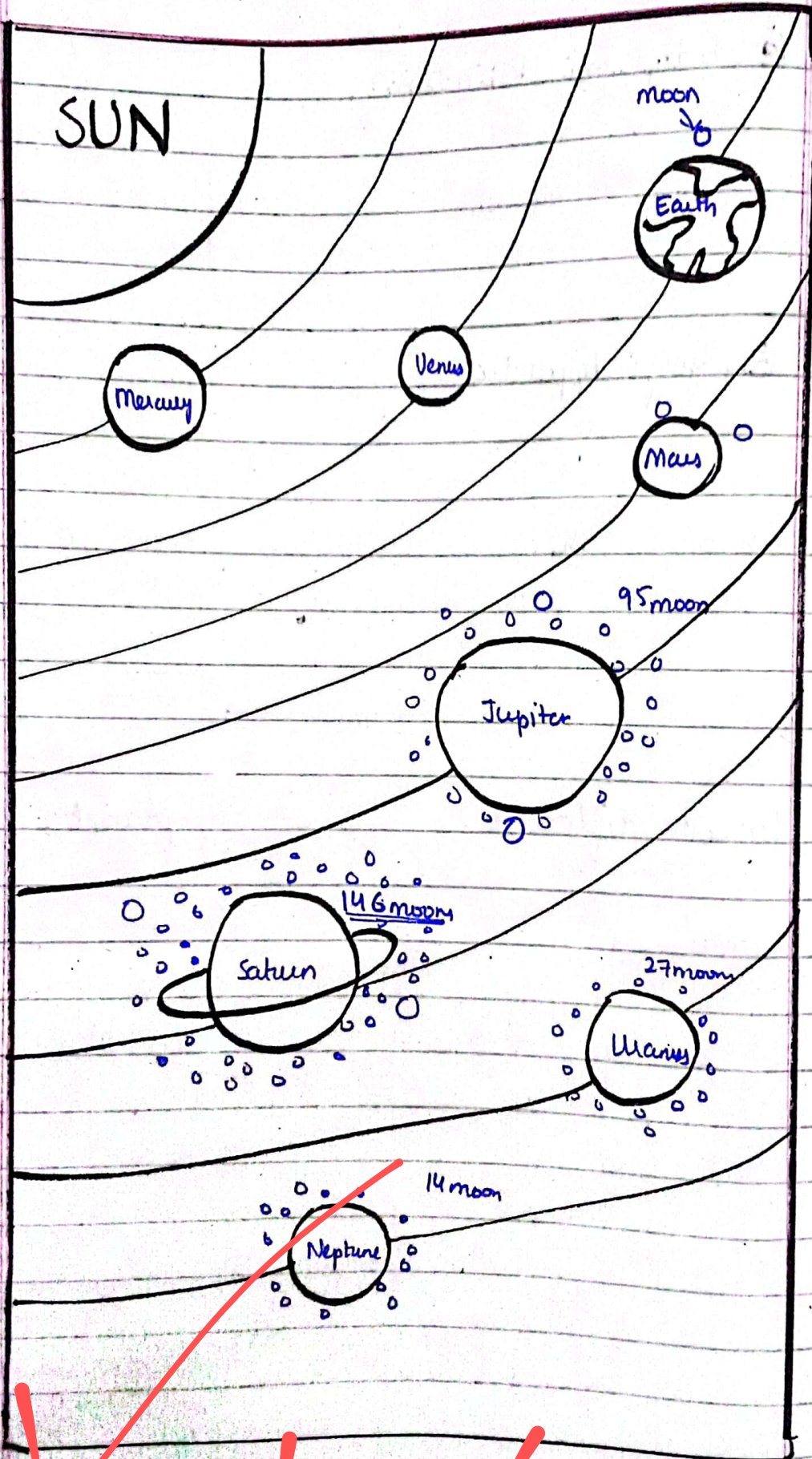
Golgi apparatus is a sacs bounded membrane like structure which helps in metabolism of protein in a cell.

### D. Draw different . . . . planet.

#### Solar System:

A tiny gravitationally bound part of galaxy which centers around the sun and consists of 8 planets, several moons and other object is called the solar system. With sun being the largest part of system, Earth is the only inhabitable planet on solar system which is part of milkyway galaxy.







② - Total price at which shirts are sold ;  
Sale = no. of shirts  $\times$  sale price for one shirt  
= 35  $\times$  308  
= Rs 10,780      ②

③ - Difference between purchase and sale = Profit  
 $\Rightarrow$  Profit = Sales - Purchase  
Total Profit = 10,780 - 9800  
Total Profit = Rs 980      ③

④ - % age of Profit generated =  $x$  = ?

$x$  % of Purchase = Profit

$$\frac{x}{100} \times 9800 = 980$$

$$\frac{x}{100} = \frac{980}{9800}$$

$$\frac{x}{100} = \frac{1}{10}$$

$$x = \frac{100}{10}$$

|            |
|------------|
| $x = 10\%$ |
|------------|

∴ Hence the cloth merchant generated a profit of 10% on his purchase of 35 shirts.

C. Find . . . . . 12 years.

Given that ;

The <sup>Actual</sup> age of the child = 10 years  
Chronological age = 12 years

IQ of the child = ?

Solution :

According to Stanford-Binet Scale ;

$$IQ = \frac{\text{Actual Age}}{\text{Chronological age}} \times 100$$

Substituting the values in the equation

$$IQ = \frac{10^5}{12.83} \times 100$$

$$IQ = \frac{50}{31}$$

$$IQ = 50$$

Therefore the IQ of the child age 10 years will be 50.

D. The average - - - - - mean.

Given that :

$$\text{Number of boys} = 30$$

$$\text{Average height} = 150\text{cm}$$

Difference in miscalculated values

$$= (165 - 135)\text{cm}$$

$$= 30\text{cm}$$

$$\text{Correct mean} = ?$$

Solution:

$$\text{Arithmetic mean} = \frac{\text{Sum of all values}}{\text{no. of all values}}$$

$$150 \text{ cm} = \frac{x}{30}$$

since sum of all values has a difference of 30 cm, therefore,

$$150 \text{ cm} = \frac{x - 30}{30}$$

$$150 \text{ cm} \times 30 = x - 30$$

$$4500 = x - 30$$

$$4500 + 30 = x$$

$$4470 = x$$

The correct arithmetic mean will therefore be

$$\text{Arithmetic Mean} = \frac{4470}{30}$$

Correct Arithmetic  
Mean =

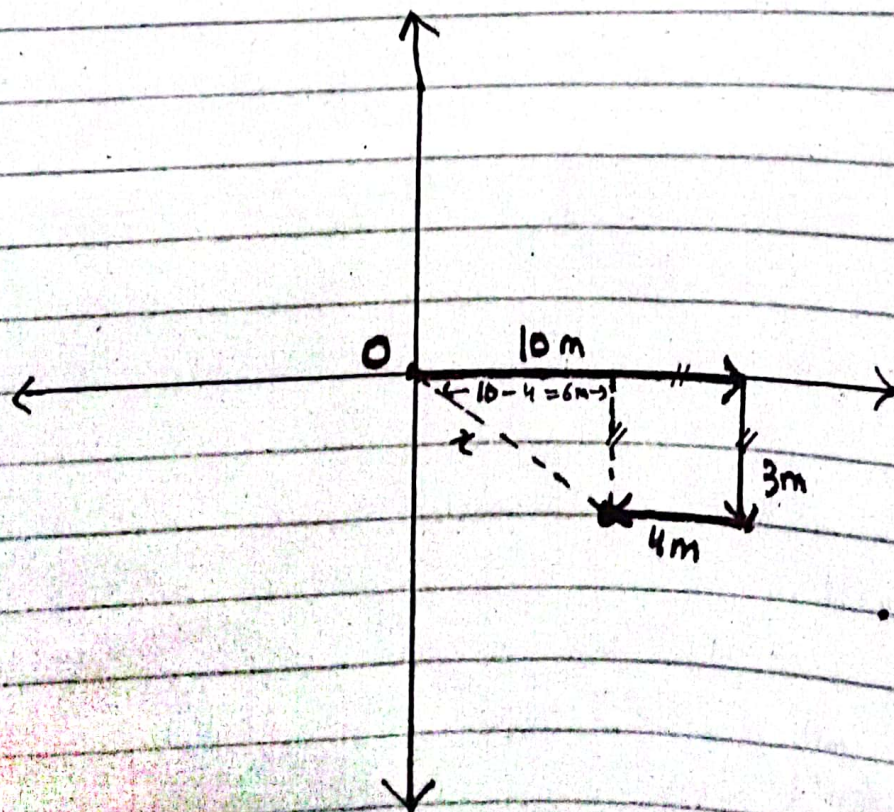
149cm

## Question No. 8

A. Sarah - - - - - point,

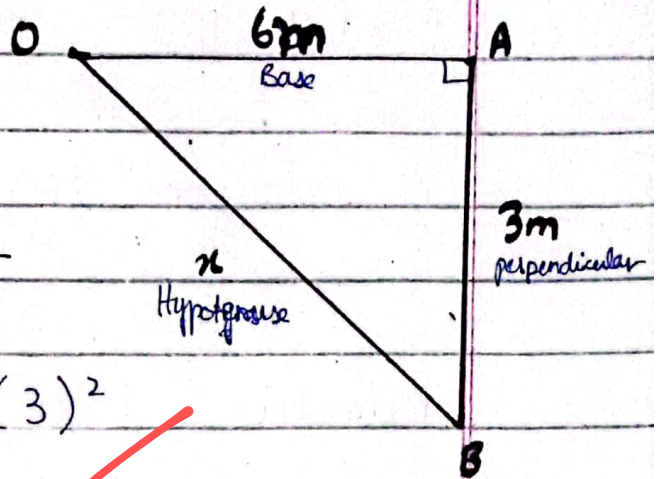
Provided that:

- Sarah walked 10 m east,
- turned right and walked 3 m
- turned right again and walked 4 m.



Distance from initial point =  $x$

∴ through Pythagoras theorem



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

$$x^2 = (6)^2 + (3)^2$$

$$x^2 = 36 + 9$$

$$x^2 = 45$$

∴ sq. root on both sides

$$\sqrt{x^2} = \sqrt{45}$$

$$\therefore x = 6.7 \text{ m}$$

Hence Sarah is 6.7m away from her initial point in the South East direction.



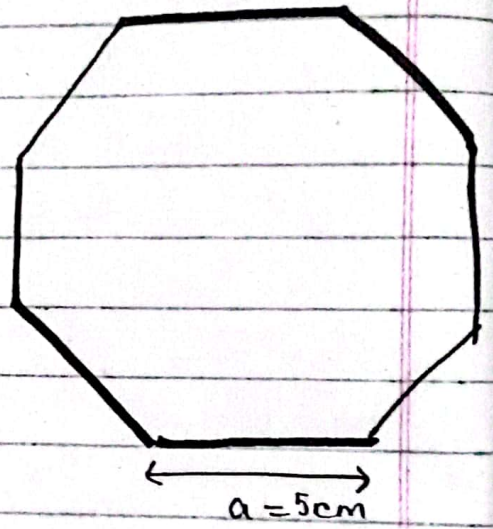
B. Find . . . . . octagon

Provided that each side is equal to 5cm, the perimeter of octagon is

Perimeter =  $8a$

$P = 8(5)$

$P = 40\text{cm}$



D. In a certain code . . . . . code:

M A D R A S

=

N B E S B T

Find

B O M B A Y

Following the pattern,

A → B → C      D → E

F      G      H      I      J

K      L      M → N → O → P

Q      R → S → T

U      V      W      X      Y

2 3

**BOMBAY = CPNCBZ**

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