

PART-IQUESTION # 01.

A. How do you see COP-28 in comparison to COP-27 in bringing climate fund.

1. OPENING PARAGRAPH:

Since 1995, UNFCCC (United Nations Framework of Convention on Climate Change), has been conducted COP (Conference of Parties) annually to combat with changing climate conditions. The recent COP28 meeting was held in Dubai to analyse climate conditions and to operate Loss and Damage Fund officially which was established in COP27, in Egypt.

2. How COP28 is different from COP27??

In 2022, COP27, all the members

of conference of Parties mutually decided to create Loss and damage fund for the developing countries who are more vulnerable because of changing climate conditions.

According to UNFCCC report, Pakistan is the 3rd most vulnerable country of climate change. ^{The} 2022 Floods are example of vulnerability of Pakistan.

Hence, in COP28, officially Lost and damage fund has started.

i- Loss and DAMAGE FUND?

Loss and damage fund is a fund bank which will be given to the developing countries who face burnt of changing climate and face damage.

In order to function this fund a few of member countries gave funds, such as.

1. UAE - \$100 million.
2. Italy & France - \$108 million Each
3. Germany - \$100 million
4. USA - \$15 million.
5. Japan - \$10 million.

This loss and damage Fund could only collect \$700 million funds for developing nations.

However, the amount collected is only a few percent of total damage caused by environmental disasters in developing nation.

2. GLOBAL STOCKTAKE

Another significant action in COP28 was the first report of Global stocktake which was started in (COP26 - Glasgow). The report of Global stocktake proved conducive to analyse and assess the performance of member countries to combat carbon emission.

According to report, 'Since Paris Agreement 2016, The rate of carbon emission' has been reduced to $2.4-2.6^{\circ}\text{C}$ temperature variation.

Besides, this report says that if it continues in the same way, then by 2100, $1.7-2.1^{\circ}\text{C}$, temperature could be reduced, and there are 67% chances of limiting it to 2°C by 2025.

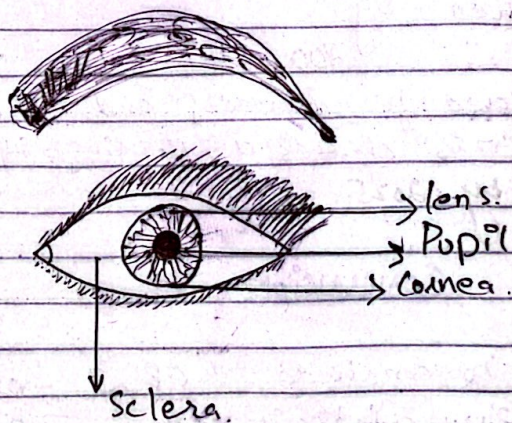
CONCLUSION.

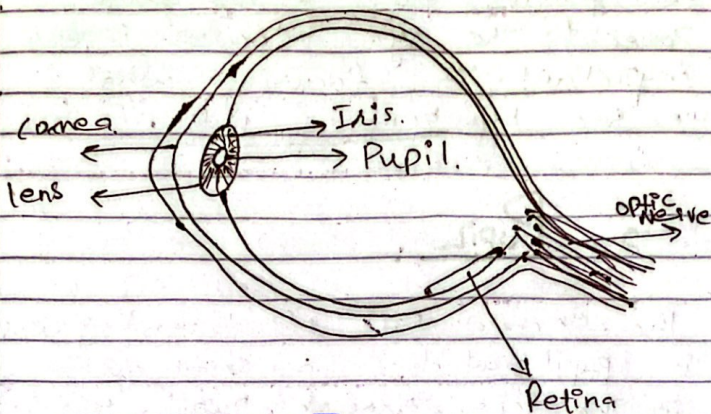
To conclude, COP28 has been successful in many ways from COP27, such as by initialization

of loss and damage fund and global stocktake rate, it is hopeful to combat with 'Carbon emission on massive scale.' Furthermore, Loss and damage fund will also penalize ^{the} world's major 'Carbon gas emitters' on the basis of their emission rate. Therefore, it will bind them to reduce carbon and green house gases' emission.

C. FUNCTIONS OF CORNEA, PUPIL, CONVEX LENS and RETINA.

DIAGRAM





1. HUMAN EYE & ITS PARTS.

Human eye is one of the vital organs of human body. to see it is a necessary organ to see the things existing in the world. Therefore, human eye comprising multiple useful parts such as Cornea, Pupil, Convex lens and Retina, helps in seeing things. All of these mentioned organs work in collaboration to create a clear image of an object in the mind.

1. CORNEA:

Cornea is the clear covering over the pupil and iris. It is a dome shaped part of human eye, that's why contact lens still on the cornea. The cornea is the main part

that provides 66% of the optic power to the eye. Cornea is very important in focusing what we see by bending light.

2. PUPIL:

The second part after bending light is pupil which is a small opening in the iris, through pupil, the light gets in the eye. Pupil has a capacity to expand and relax depending on the intensity of light that get entered. In the presence of intense light, pupil is small, and it is large when the light is low.

3. CONVEX LENS:

The part of the eye immediately next to the iris is lens that performs delicate focusing of light rays upon the retina. It is a dome shaped convex lens, and its thickness is controlled by the ciliary muscles.

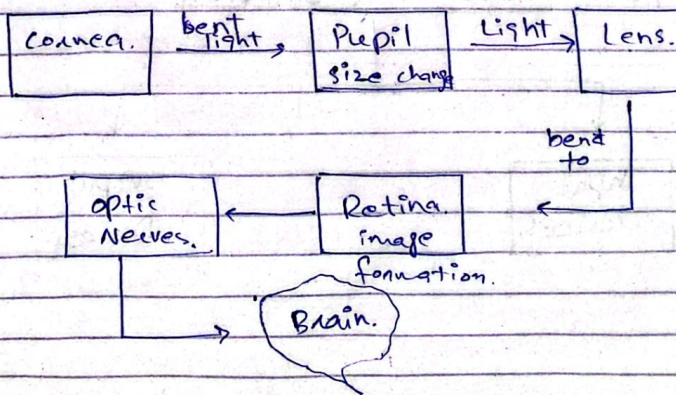
4. RETINA:

Retina is the innermost layer of the eye that contains photo

receptor cells. These photoreceptor nerve cells react to the presence of and intensity of light by sending an impulse to the brain via the optic nerve. Retina contains million of tiny light-sensitive cells called Rods and cones. Cones are responsible for perceiving colour and detail while rods are responsible for night vision, peripheral and side vision and detecting motion.

3. COLLABORATION.

All of these underlying organs or parts of the eye work in collaboration to create an image of the object seen and those signals are then sent to brain through optic nerves at the backside of the eye.



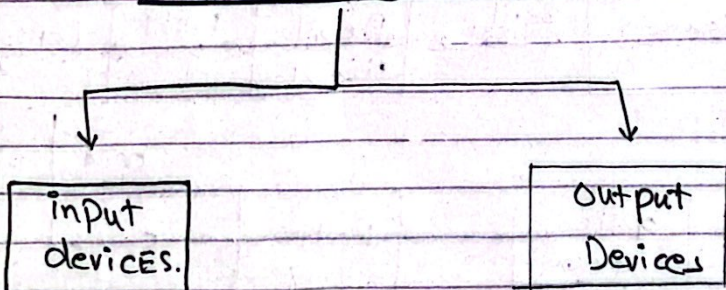
QUESTION # b

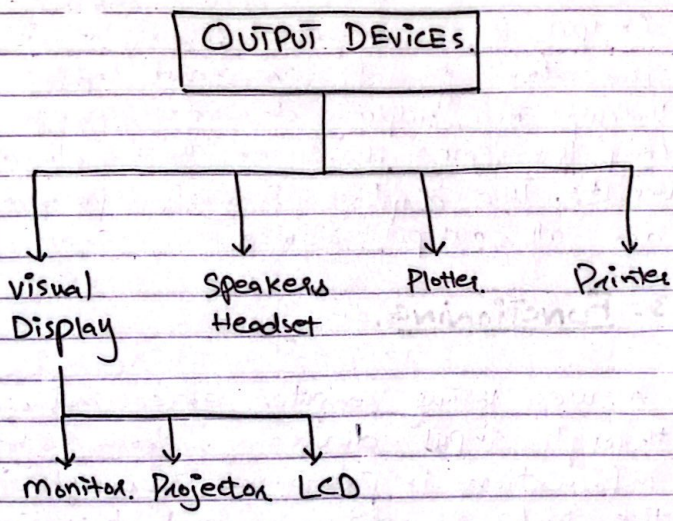
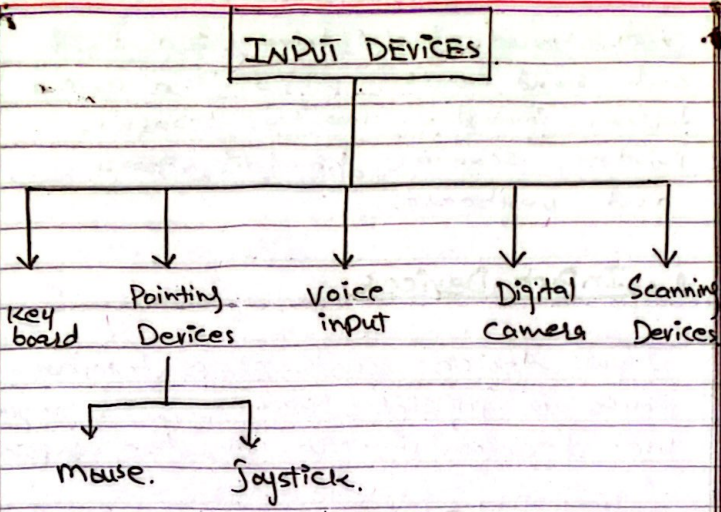
INPUT & OUTPUT DEVICES

1. Opening Paragraph.

A computer is such a remarkable machine which has changed the destiny of humankind by bringing such a revolution. A computer is made of some input and output devices through which a set of information is given to process and computer shows its output through output devices. Therefore, both input and output devices are compulsory for the proper functioning of a computer.

2. PARTS OF COMPUTER





Both the input and output devices of a computer are parts of its hardware or physical parts of a computer. It is used to run the software through hardware,

motherboard, hard drive, the video and sound cards. while The external devices includes monitors, speaker, printer, scanner, headset, mouse, and keyboard.

1. Input Devices.

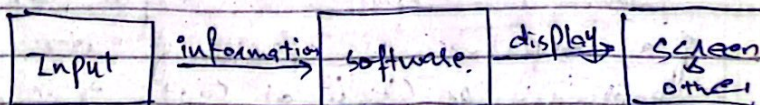
Input devices such as a keyboard, mouse or joysticks permit the computer user to communicate with the computer.

2. Output Devices.

Output of a computer could be in the form of soft or hard copy. Through the output devices, the computer gives its user their desired results. The display, printer, speaker are all output devices.

3. FUNCTIONING.

A user using computer enter information through input devices, from where information is processed through the help of software and then it is displayed through output devices.



D. CAUSES OF WATER POLLUTION

1. Water Pollution.

Water pollution is the addition of impurities on the surface of water, such as lakes, rivers, seas, canals and other water reservoirs. These addition of impurities and waste materials in the water causes water pollution by polluting water resources and making it harmful for living things and human beings. Water pollution has hazardous effects for both the plants and animals and humans, such as causing disease, depletion of oxygen in water reservoirs and increases acidity of water.

2. Water Pollutants:

There are several water pollutants that modifies, physical, chemical and biological composition of water, such as organic matter, pathogens, alkalies, debris of industries, heavy metals, excessive harmful nutrients and toxic organic compounds.

3. CAUSES OF WATER POLLUTION:

Water pollution is significantly disastrous for human beings and living things including plants and animals equally. Some of the main causes of water pollution includes:

1. Industrial discharges.

Industries release their various pollutants and waste substances into water bodies, including heavy metals, toxic chemicals and organic compounds.

2. Agricultural Runoff.

Agricultural runoff through rain is another cause of water pollution. The excessive nitrogen and phosphorus runs off from the surface into water bodies causing harmful impacts on the lives of humans.

3. Acid Rain.

When excessive nitrogen, phosphorus and sulphur keep adding into the atmosphere, it causes reaction with water vapours converting it into acid, such as HCl and sulphuric acid which is in the form of rain added in the water reservoirs.

making it running acid lakes.

4. Municipal wastage.

Sewage and wastewater from households, businesses and urban areas is also drained into the water bodies. It contains pathogens, organic matter, nutrients which can degrade water quality.

5. Oil spills.

Oil spillage from submarine, sea ships and pipelines is released into water bodies either accidentally or through intentionally, eventually, degrades water quality.

6. Plastic Pollution.

Improper disposal and accumulation of plastic into reservoirs is another major polluting factor for water pollution. It could harm marine life.

7. Floods water.

Floods of 2022 are ^{the best} example showing how water from flooded areas poured on collected into water reservoirs making it the worst for use.

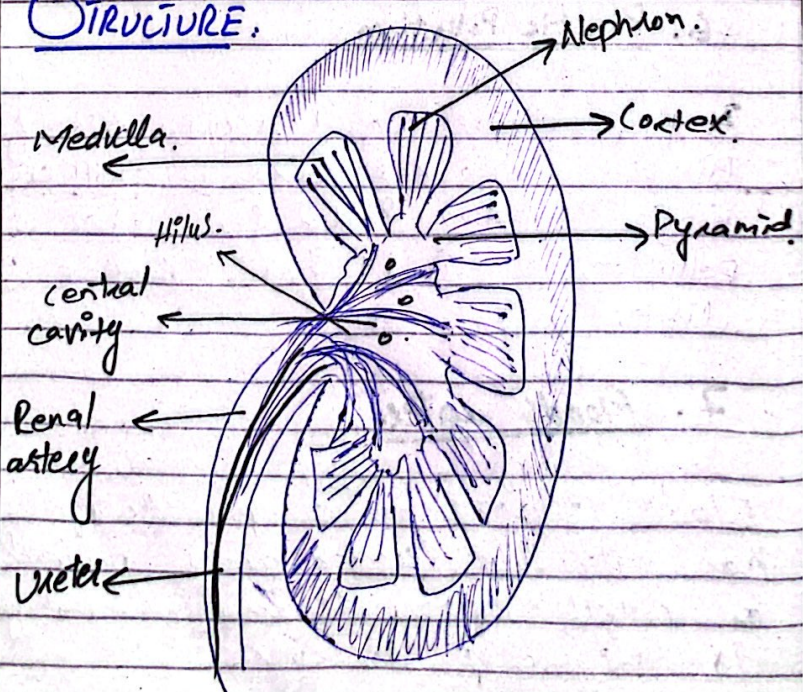
Conclusion:

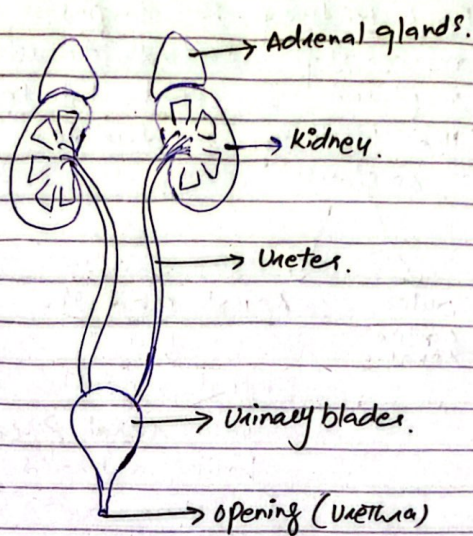
However, there are several other pollutants and sources, such as deforestation, urban stormwater runoff, agricultural livestock operations. Addressing these sources of water pollution requires regulation and effective management.

QUESTION #5

KIDNEY:

STRUCTURE:





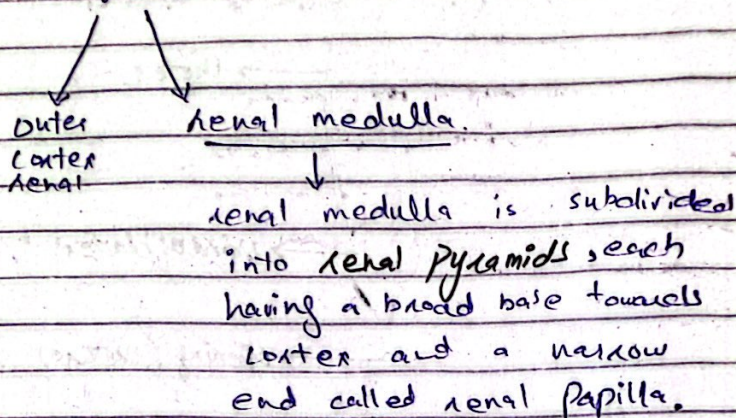
STRUCTURE OF KIDNEY.

The kidneys are dark-red, slightly flattened, bean-shaped organs. The kidney is a 5 cm wide and almost 10 cm long organ of body. In human body, there are two kidneys, the left is slightly up than the right one. Kidneys are placed against the abdominal muscles.

The outer surface of the kidney is cortex and the inner surface is medulla, the inner surface of the kidney is concave, it has a deep notch called hilus. The Ureters, renal artery, renal vein and the nerves enter the kidney through the hilus.

Each kidney is composed of numerous microscopic coiled tubules called nephrons or renal tubules.

The kidney is divided into two regions.



All of the parts of kidney work in integration to filter out waste materials from blood and excrete them out through urethra.

B. DIFFERENT RENEWABLE ENERGY.

SOURCES UNDER CPEC

1. OPENING PARAGRAPH.

The China-Pakistan Economic Corridor is a significant infrastructure and economic development project including various energy-related initiatives aimed at addressing energy crisis of Pakistan. Several energy renewable sources have been incorporated under CPEC framework, some of them are as follows:

1. SOLAR ENERGY.

Solar Power Project are prominent component of CPEC's framework's energy renewable initiative. Pakistan has abundant solar energy resources especially in its southern regions, making solar energy a vital option for electricity generation.

2. WIND ENERGY.

Wind Power Projects are another significant renewable energy resource under CPEC.

Pakistan has substantial wind energy potential, particularly along its coastal areas and in regions, such as Sindh and Baluchistan. Wind farms and wind turbine installations have been established under CPEC.

3. HydroPOWER

Hydropower projects play a crucial role in generating electricity. Under CPEC there are plans to develop and upgrade hydropower infrastructure, including new dams, hydroelectric power stations and water management projects.

4. Biomass ENERGY

Biomass energy deriving from organic materials, such as agricultural residues, animal waste and organic byproducts can be considered for Pakistan. CPEC includes initiatives to explore and develop biomass energy projects including biogas plants and biofuel production facilities.

5. Geothermal ENERGY

Although still in the early stages of

development, geothermal energy holds promise as a renewable energy source in Pakistan. CPEC has provisions for exploring and accessing country's geothermal potential.

CONCLUSION:

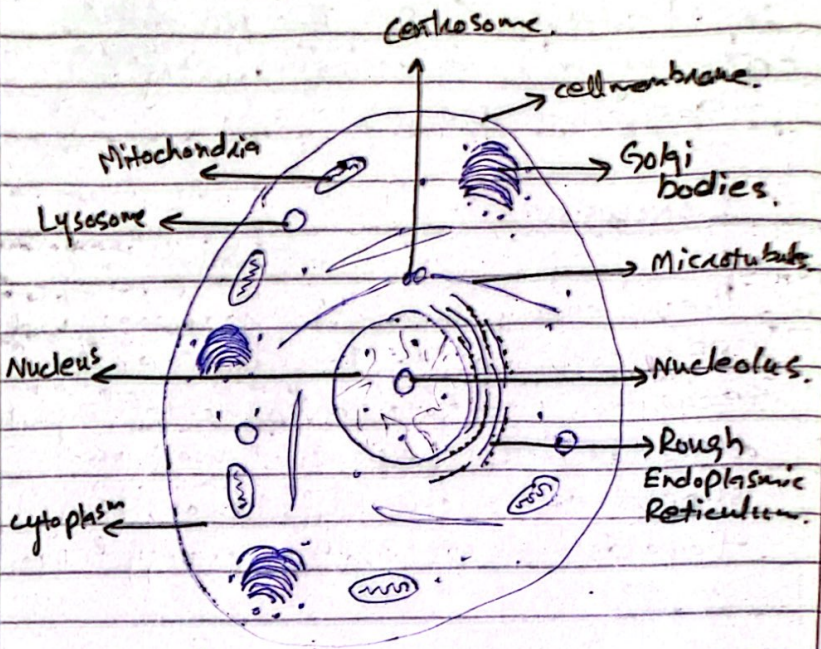
These energy renewable resources under CPEC contribute to Pakistan's energy security, mitigate environmental impacts associated with fossil fuel use, and support the country's transition towards a sustainable energy future.

C. DIFFERENT PART OF CELL IN HUMAN BODY.

1. OPENING PARAGRAPH

The human body is composed of trillions of cells, each cell with its specific structure and cell organelles. Every cell organelle or part is specific in its special functioning and role towards the growth of human body.

STRUCTURE



1. CELL MEMBRANE

Cell membrane is the protective layer outside the cell. It is the main part which maintains cell structure. Cell membrane is a permeable membrane letting ~~any~~ molecules from get into cell from its porous surface.

2. CYTOPLASM.

Cytoplasm is a jellylike - sticky fluid present in the cell. It helps cell organelles to move freely in the cell. 90% of cell is cytoplasm.

3. NUCLEUS.

Nucleus is the main body in the cell. It is like the boss in the cell. It is significant in the time of cell division. It consists of DNA, chromosomes and genetic material to be transferred into new cells.

4. Mitochondria

Mitochondria is the powerhouse of the cell. It provides energy to the different organelles of the cell. Energy is stored in the mitochondria in the form of ATP which helps in different workings and metabolism.

5. Golgi bodies.

Golgi bodies or Golgi apparatus is responsible for modifying, sorting and packaging of proteins and lipids synthesized into endoplasmic reticulum. It consists of flattened membrane-bound sacs called cisternae.

6. LYSOSOMES.

Lysosomes are membrane-bound organelles containing digestive enzymes that break down cellular

wastes, damaged organelles and foreign particles through a process called hydrolysis.

7. RIBOSOMES.

Ribosomes are cellular machinery responsible for protein synthesis, they can be found free in the cytoplasm or attached to the rough Endoplasmic reticulum (RER). They translate genetic information into mRNA into protein chains through process of translation.

8. CYTOSKELETON.

This is a system of protein networks of protein filaments that provides structural support to the cell and maintain cell shape.

9. CENTRIOLES.

Centrioles are cylindrical structures composed of microtubules that play a role in organising the mitotic spindle during cell division. Typical found in pairs near the nucleus of the cell.

These are some of the main parts of a typical cell found in human body.

Each organelle performs specific function that are essential for the survival of the cell.

D. DRAW DIFFERENT PARTS OF SOLAR SYSTEM including MOONS.

SOLAR SYSTEM.

Our solar system consists of Sun and eight planets which are revolving around the sun in their fixed orbits. Every planet varies in its shape, composition, atmosphere and number of its moons. The sun have 8 planets and a lot of moons of each planet.

PLANETS.

MOONS.

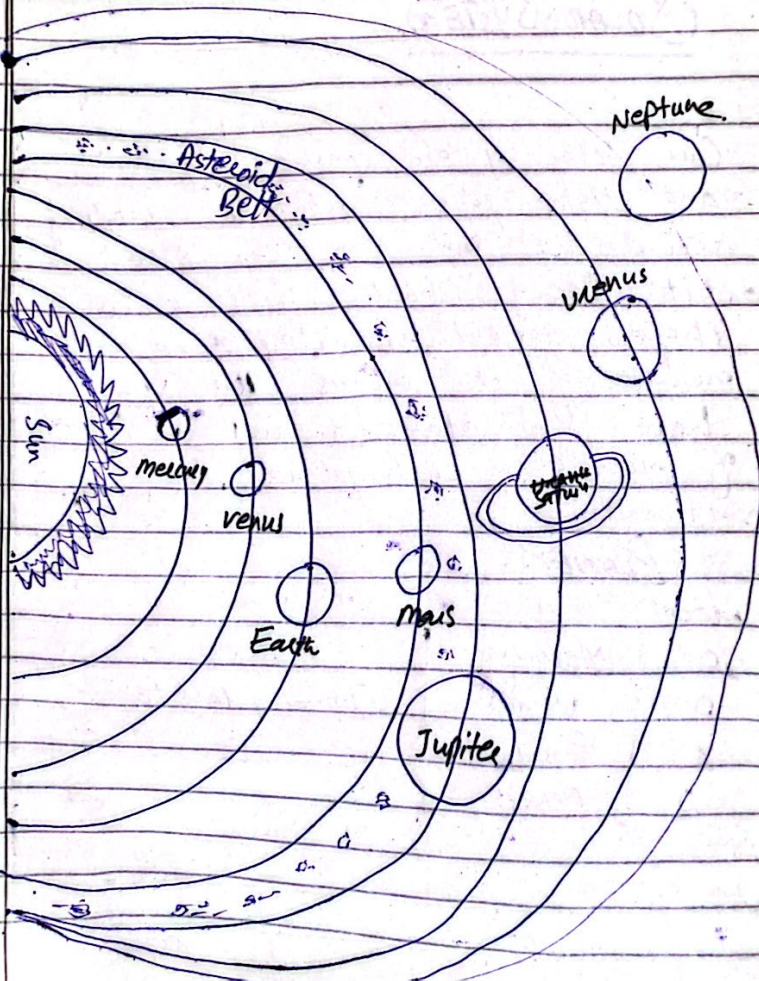
0	Mercury	Inner planets.
0	Venus	
1	Earth	
2	Mars	

67	Jupiter
62	Saturn
27	Venus
14	Neptune

outer planets

Pluto is a dwarf planet.

DIAGRAM.



PART-II.

QUESTION-8.

A. SOLUTION:

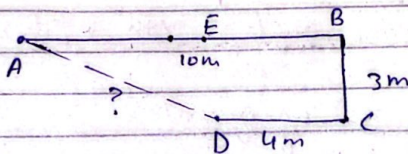
Sarah walked 10 m East

Then right = 3 m

Again right = 4 m

How far from

its position = ?



clearly $AB = 10m$

$$BC = 3m$$

$$CD = 4m$$

$$AD = ?$$

$$\text{So, } AB - DC = 10m - 4m$$

$$AE = 6m$$

Using Formula:

$$\therefore \sqrt{a^2 + b^2} = c$$

$$AD = \sqrt{(AB)^2 + (BC)^2}$$

$$AD = \sqrt{(10)^2 + (3)^2}$$

$$\sqrt{100 + 9}$$

$$AD = \sqrt{109}$$

$$AD = 10.44 \text{ m}$$

B. Solution:

Regular octagon with 8 sides,
each side has a length of 5 cm,
we can calculate perimeter
Perimeter = Number of sides \times length of side
Perimeter = $8 \times 5 = 40 \text{ cm}$

d

$$\text{Interior angle} = \frac{180^\circ \times (n-2)}{n}$$

$n =$ no of sides

$$n = 8$$

Putting values;

$$\text{Interior Angle} = \frac{180^\circ \times (8-2)}{8}$$

$$= \frac{180^\circ \times 6}{8} = \frac{1080^\circ}{8} = 135^\circ$$

$$\text{Interior angle is } 135^\circ$$

C. Certain code.

Given Data:

MADRAS = NBESBT

BOMBAY = ?

Solution.

MADRAS
↓ ↓ ↓ ↓ ↓
NBESBT

Clearly, the sequence is the ~~pre~~ next alphabet of each alphabet; so,

BOMBAY
↓ ↓ ↓ ↓ ↓
CPNCBZ

CPNCBZ Ans.

A. FINDING MISSING TERM.

11, 13, 17, _____, 23

Solution.

The series shows sequence of Prime numbers, therefore,

11, 13, 17, 19, 23

19 is the next Prime number. Ans

B. Given Data.

$$\text{bought shirts} = 35$$

$$\text{each price} = 280$$

$$\text{Total CP} = ?$$

∴

$$\text{Total cost price} = \text{Num of shirts} \times \text{cost price each shirts}$$

$$\text{Total Price} = 35 \times 280$$

$$\text{Total Price} = 9800 \text{ Rs.}$$

$$\therefore \text{Percentage of Profit} = \left(\frac{\text{Profit}}{\text{Total CP}} \right) \times 100$$

$$\text{So, Profit} = ?$$

$$\therefore \text{Profit} = \text{Total SP} - \text{Total CP}$$

$$\text{Total selling price} = \text{No. of shirts} \times \text{selling price}$$

$$\text{T. SP} = 35 \times 308$$

$$\text{T. SP} = 10780$$

$$\text{Profit} = T. SP - T. CP$$

$$10780 - 9800$$

$$\text{Profit} = \text{Rs. } 980$$

$$\text{Profit \%} = \frac{\text{Profit}}{\text{Total CP}} \times 100$$

$$\text{Profit \%} = \frac{980}{9800} \times 100$$

After canceling

$$\text{Percentage Profit} = 10\%$$

So,

The percentage profit is 10% Ans.

c. Find IQ:

Given Data:

$$\begin{aligned} \text{Actual age} &= 10 \text{ years.} \\ \text{Chronological age} &= 12 \text{ years.} \end{aligned}$$

Formula.

$$\therefore IQ = \left(\frac{\text{Chronological age}}{\text{Actual age}} \right) \times 100$$

Solution

$$IQ = \left(\frac{12}{10} \right) \times 100$$

$$IQ = 120 \text{ Ans.}$$

D. Given Data:

Average height of 30 boys = 150 cm
one value of 165 cm copied as
135 cm.

Mean = ?

Solution:

$$\therefore \text{Average} = \frac{\text{Sum of all values}}{\text{Number of values}}$$

$$150 = \frac{X}{30}$$

$$X = 30 \times 150 = 4500$$

Now,

$$\text{correct sum} = X - \text{incorrect} + \text{correct}$$

$$Y = X - 135 + 165$$

$$Y = 4500 - 135 + 165$$

$$Y = 4530$$

$$\text{Correct Average} = \frac{Y}{30}$$

$$\text{Correct average} = \frac{4530}{30}$$

$$\text{correct average} = 151$$

So, average height of 30 boys is

$$\boxed{151 \text{ cm}} \quad \text{Ans.}$$

D. PROBABILITY.

DATA:

Number of Green balls = 6

No of yellow balls = 10

\therefore Total no. of balls = $\overset{\text{No. of}}{\text{Green balls}} + \overset{\text{No. of}}{\text{Yellow balls}}$

$$\text{Total} = 6 + 10$$

$$\text{Total} = 16.$$

Now, Probability.

Probability of Picking Yellow = $\frac{\text{No. of Yellow balls}}{\text{Total no. of balls}}$

$$\text{Probability} = \frac{10}{16}$$

$$\text{after cancelling} = \frac{\cancel{10}}{\cancel{16}} = \frac{5}{8}$$

$$\boxed{\text{Probability} = \frac{5}{8} \text{ Ans.}}$$