

GSA PAPER

Date _____

PART - II

SECTION - I

Q. (Q.No: 2)

Q. Global warming, which is a global threat, is hitting the developing and least developed world the most. What measures should be taken to counter it in COP-29?

Ans: Global Warming:

Global warming is the rise in the average temp of the earth wreaking havoc on the environment by bringing severe and sudden climate change all around the globe. It is caused by the over usage of fossil fuels and other forms of non-renewable energy resources, along with an inefficient and wasteful usage of renewable energy resources.

What measures should be taken to counter to it in COP-29?

COP-29

The 2024 United Nations Climate Change Conference or Conference of the Parties of the UNFCCC commonly known as COP-29 will be the 29th United Nations Climate Change conference. It will be held in Baku, Azerbaijan. Mukhtar Babayev will preside COP-29.

Measures:

(a) Setting Ambitious Emissions

Reduction Targets:

Countries need to agree on more ambitious targets to reduce greenhouse gas emissions, building upon the commitments made in previous COP meetings like COP-26.

Date _____

(b) Promoting Renewable Energy Adoption:

Encouraging the transition to renewable energy sources such as solar, wind, and hydroelectric power can significantly reduce reliance on fossil fuels and lower emissions.

(c) Enhancing Global Cooperation on Climate Action:

Strengthening international cooperation and collaboration is crucial for effectively addressing climate change. This involves sharing knowledge, technology, and resources to support mitigation and adaptation efforts globally.

(d) Protecting and Supporting Restoring Ecosystems

It is important to protect and restore ecosystems, like forests, wetlands, and other ecosystems w/c can help sequester

Carbon dioxide from the atmosphere and mitigate the impacts of climate change.

(e) Investing in Research and Innovation:-

Continued investment in research and innovation is necessary to develop new technologies and solutions for mitigating and adapting to climate change effectively.

(b) Describe the functions of arteries, veins and capillaries.

Ans
11) Arteries:-

(a) Transport Oxygenated Blood:

Arteries carry oxygen-rich blood away from the heart to various parts of the body, delivering oxygen and nutrients to tissues and organs.

Date _____

(a) High Pressure Conduit:

Arteries have thick, elastic walls that enable them to withstand the high pressure generated by the heart's pumping action, ensuring efficient blood flow throughout the body.

(b) Regulate Blood Pressure:

Arteries help regulate blood pressure by dilating or constricting in response to hormonal and neural signals, maintaining adequate perfusion to tissues.

Veins:

(a) Return Deoxygenated Blood:

Veins transport deoxygenated blood from the body's tissues back to the heart, where it is pumped to the lungs for oxygenation.

(b) Low Pressure Conduit:

Unlike arteries, veins have thinner walls and less muscle tissue.

Date _____

allowing them to accommodate larger volumes of blood at lower pressures.

(c) Contain Valves:

Veins contain one-way valves that prevent the backward flow of blood, assisting in the return of blood to the heart against gravity, especially in the limbs.

(3) Capillaries:

(a) Site of Exchange.

Capillaries are the smallest and most numerous blood vessels, where the exchange of gases, nutrients, and waste products occurs between the blood and surrounding tissues.

(b) Thin-walled and Permeable:

Capillary walls are thin and highly permeable, allowing for the diffusion of substances such as oxygen, carbon dioxide, glucose, and hormones between blood stream and tissues.

Conclusion:

three types of blood vessels together, those work in coordination to maintain proper circulation and ensure the delivery of oxygen and nutrients to cells while removing metabolic waste products.

Q Why do atoms form chemical bonds? Explain structure of water.

Q Why do atoms form bonds?

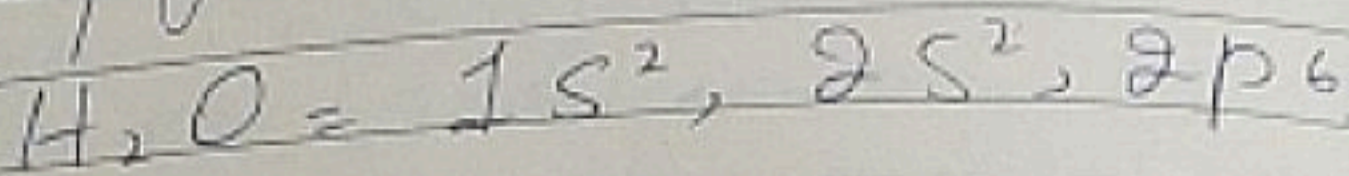
Atoms form bonds because

a) They always try to reach the most stable (lowest energy) state via donating, accepting, or sharing of electrons.

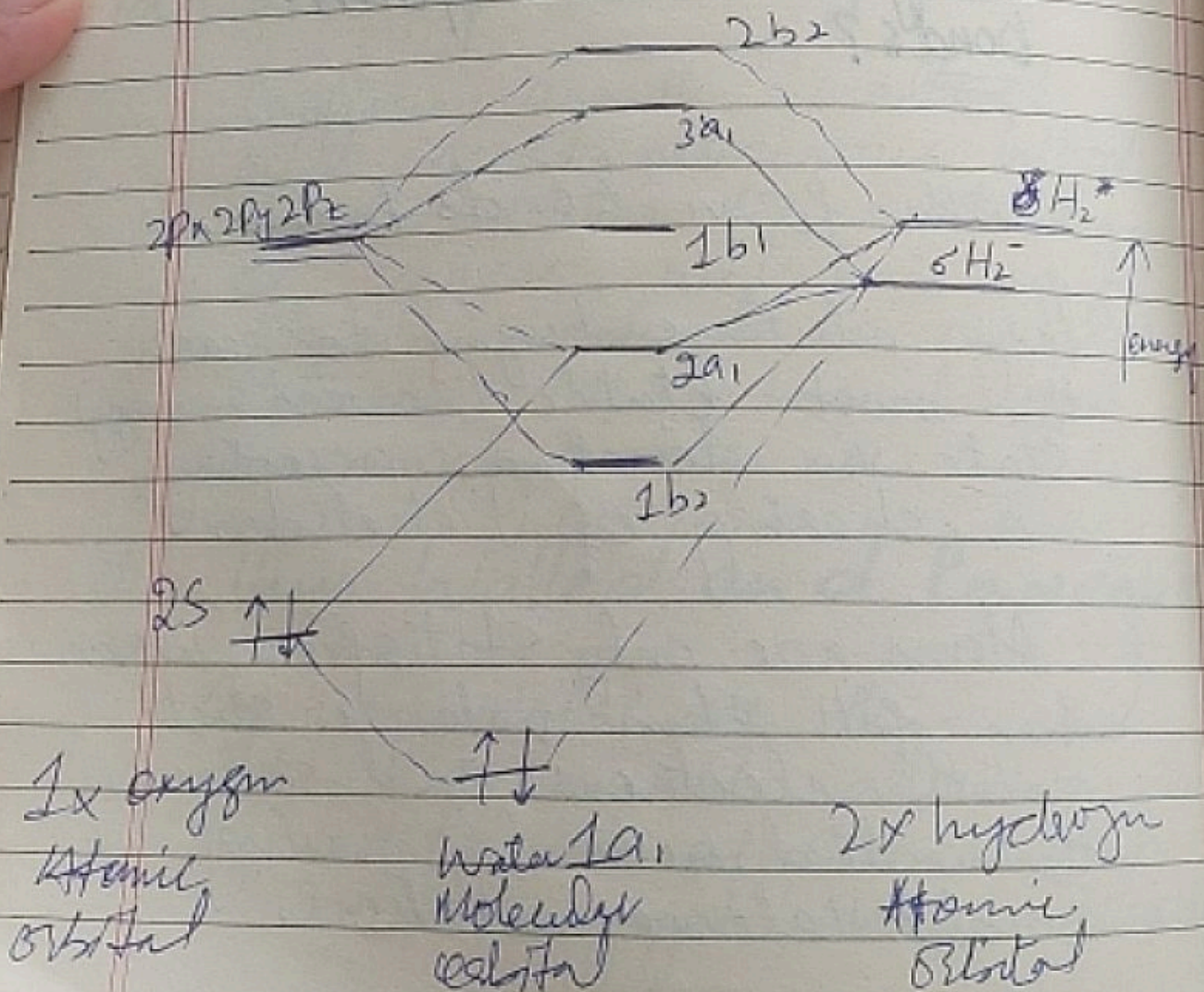
b) Atoms are only satisfied when they fill their valence shell with electrons and satisfy the octet rule by having eight valence electrons.

Molecular Orbital Structure of H_2O :

The water molecule has 10 electrons and 10 protons; thus, its electronic configuration is



The water molecule has a bent or angular shape with two lone pairs and two bond pairs of electrons.



Date _____

What are conductors, semiconductors, metals, plastics, and ceramics? Give an example of each.

① Conductors :-

Conductors are materials that allow the flow of electrical current through them with minimal resistance.

Examples:

1. Copper
2. Iron
3. Silver etc.

② Semi-Conductors :-

Semi-conductors are materials that have electrical conductivity less than that of conductors and insulators.

Examples:

- ① Silicon
- ② Germanium
- ③ Selenium etc.

(3) Metals-

Metals are a class of elements characterized by their properties including high electrical and thermal conductivity, luster or shine, malleability, ductility, and typically high density. They are typically solid at room temp and have a crystalline structure.

Examples:

- ① Iron
- ② Copper
- ③ Aluminium etc.

(4) Plastics:-

Plastics are synthetic materials made from polymers, which are large molecules composed of repeating structural units known as monomers.

Examples:

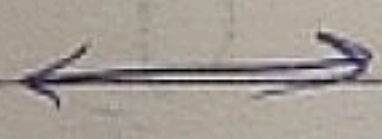
- ① Polypropylene
- ② Teflon etc

Ceramics :

Ceramics are inorganic, non-metallic materials typically made from clay and other minerals, which are shaped and then fired at high temperatures to create a hard, brittle, and often durable product.

① Pottery and Porcelain

② Refractory ceramics etc.



SECTION II

(a)
Q7 Define I.Q, what are factors w/c affect I.Q?

Ans Definition of I.Q :-

IQ stands for intelligence quotient, a measure used to assess an individual's cognitive abilities relative to others.

Factors affecting IQ :-

Factors affecting I.Q include

- 1) Genetics
- 2) Environment
- 3) Education
- 4) Nutrition
- 5) Socioeconomic status
- 6) Access to resources and opportunities.
- 7) Prenatal care
- 8) Early childhood experiences
- 9) Cultural influences

(b) What is circumference of a circle with radius 4cm ?

Ans Circumference of a circle = $2\pi r$ \rightarrow 40

We have radius $r = 4 \text{ cm}$

Put $r = 4 \text{ cm}$ in eq (1)

$$2\pi r = 2\pi(4 \text{ cm})$$

$$= 2 \times 3.14 \times 4 \text{ cm}$$

$$= 25.12 \text{ cm}$$

$$\pi = 3.14$$

$$\approx \frac{22}{7}$$

Ans

$$8 \times 3.14$$

$$\approx 3.14$$

$$\frac{8}{25.12}$$

$$25.12$$

(1)

Age of 5-Students is

20, 22, 21, 21, 23.

Find, mean, median, mode and range.

Ans

Mean

Age of 5-Students is

20, 22, 21, 21, 23

(2)

20, 21, 21, 22, 23

$$\text{Mean} = \frac{20 + 21 + 21 + 22 + 23}{5}$$

5

As

Mean =

Sum of observations

No of observations

Date _____

$$= \frac{107}{5} = 21.4 \text{ Am}$$

Median:-

A statistical term used to represent the mid value in the arranged data.

Data: 20, 21, 21, 22, 23

Median is 21

Mode:

Use. to represent the most repeated value

Mode is 21

Range:

Difference of maximum and minimum data value in the given data.

20, 21, 21, 22, 23.

Min value = 20

& Max value = 23

So $23 - 20 = 3$ Ans

Tahis started a business with a capital of RS. 15,000. After 5 months Umar also joined him with an investment of RS. 30,000. At the start of 9th month, Usman joined them by investing RS. 45,000. At the end of the year they earned a profit of RS. 406,000. Find the share of each one.

Ans Tahis's total investment in

$$1 \text{ year} = 15000 \times 12$$

$$= 180,000 \text{ Rs}$$

Umar's total investment in

$$1 \text{ year} = 30,000 \times 7$$

$$= 210,000 \text{ Rs}$$

Usman's total investment in 1 year

$$= 45,000 \times 4$$

$$= 180,000 \text{ Rs}$$

So, the profit earned at the end will be shared in the

Ratio

$$180,000 : 210,000 : 180,000$$

$$18 : 21 : 18 = 6 : 7 : 6$$

Date _____

$$\text{Total Share} = 6 + 7 + 6 = 19$$

Now in question

$$\text{Profit earned in a year} \\ = 406,000$$

So,

$$\text{Share of a person} = \frac{\text{Profit earned}}{\text{total Share}}$$

\times Share of that Person

So

Share of Tahir

$$= \frac{406,000}{19 \times 6} = 28,210.5 \text{ RS}$$

$$\text{Share of Umar} = \frac{406,000}{19 \times 7}$$

$$= 149,579 \text{ RS Ans}$$

$$\text{Share of Usman} = \frac{406,000}{19 \times 6}$$

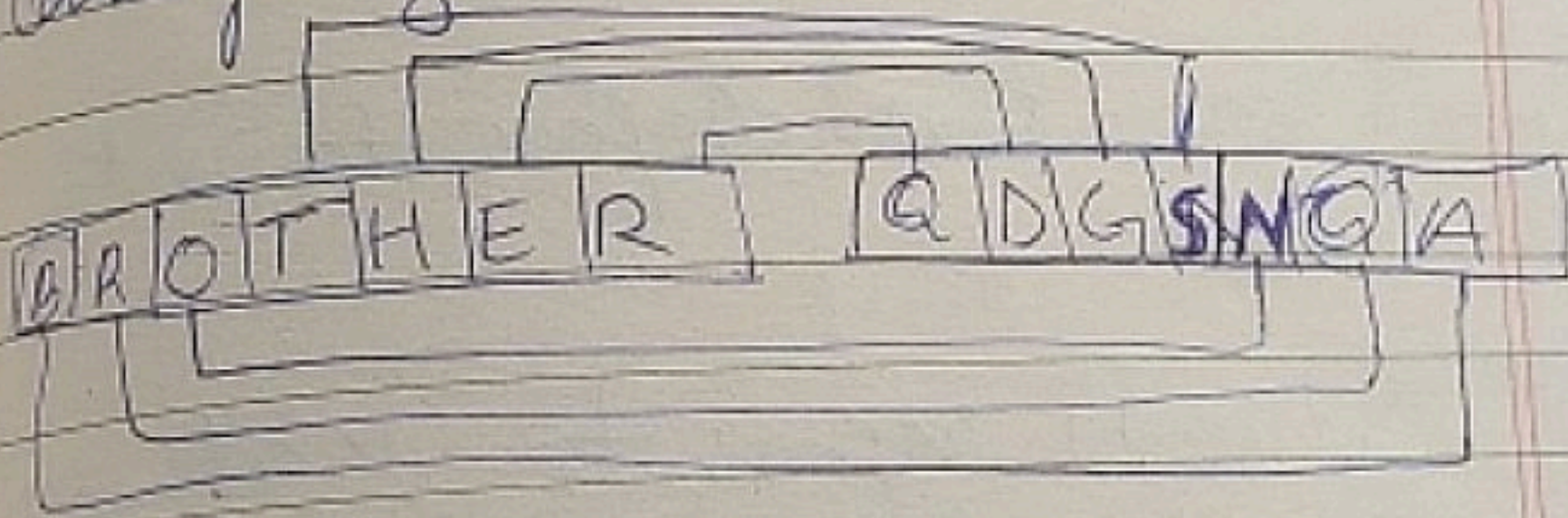
$$= 28,210.5 \text{ RS Ans}$$

Q:8

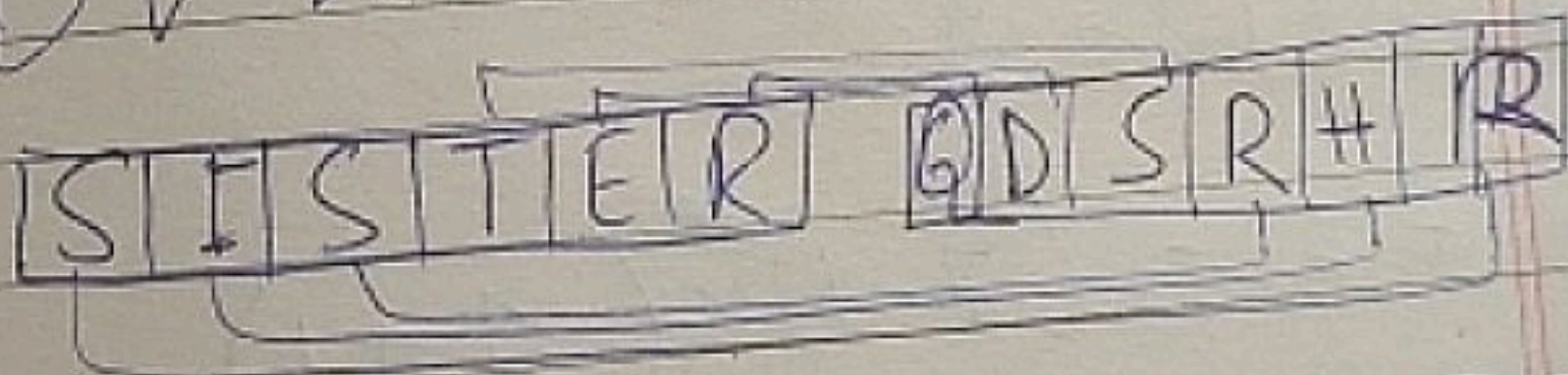
If brother BROTHER is written as @DGSNQA. How Sister will be coded?

Ans

In language, a letter that comes first in the word BROTHER has to be compared to the last letter of the word in language @DGNQA.



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 Z



So code for SISTER is @DSRHR Ans

⑥ Identify the missing terms:
1, 2, 6, 21, _____

Ans.

Term	Difference
1	2 - 1 = 1
2	6 - 2 = 4
6	21 - 6 = 15
21	n - 21 =
n	

We see

$$t(n) = (n-1) \times (s(n-1) + 1)$$

→ Where $t(n)$ refers to n th term

→ $s(n-1)$ refers to value of previous term.

Consider, now

$$* t(1) = 1$$

$$* t(2) = (2-1) \times (1+1) = 1 \times 2 = 2$$

$$* t(3) = (3-1) \times (2+1) = 2 \times 3 = 6$$

$$* t(4) = (4-1) \times (6+1) = (3 \times 7) = 21$$

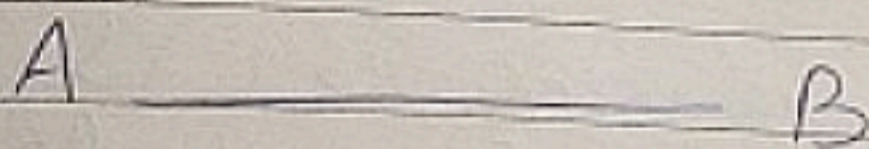
$$* t(5) = (5-1) \times (21+1) = 4 \times 22 = 88$$

Date _____

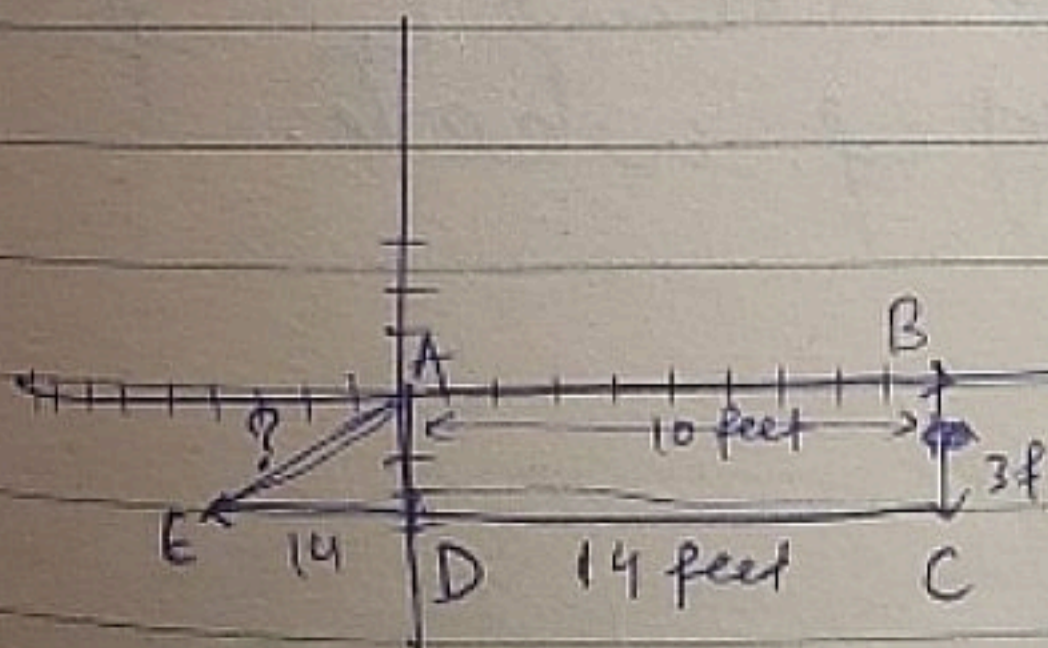
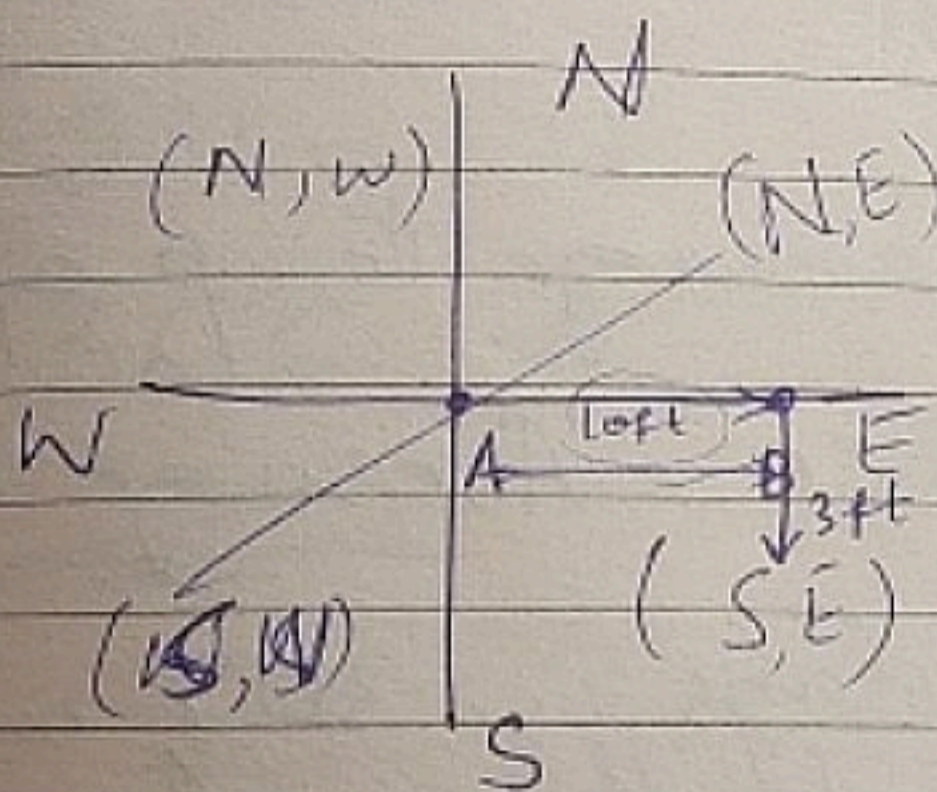
So the missing term
is 88. Ans

(C) Naseer walked from A to B in the East 10 feet. then he turned to the right and walked 3 feet. Again he turned to the right and walked 14 feet. How far is he from A?

Ans



General Directions



x2
= 21
= 88

By using Pythagorean theorem

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

$$(AE)^2 = (AD)^2 + (ED)^2$$

$$(AE)^2 = (3)^2 + (4)^2$$

$$\sqrt{(AE)^2} = \sqrt{9+16}$$

$$= \sqrt{25}$$

$$AE = 5 \text{ feet.}$$

So Naseer is 5 feet far from initial point.



(d)

The average temp of a week

is 33°C . Average of first

three days is 30°C while of the last three days is 35°C . What is temp on fourth day of week.

Sol
 $3x =$ first 3 days of average
 temp = 30°C

$z =$ last 3 days " " = 35°C

$y =$ 4th day's temp = ?

Q0

$$\frac{(3x + y + 3z)}{7} = 33^{\circ}\text{C}$$

$$\begin{array}{r} 2 \\ 33 \\ 7 \\ \hline 231 \end{array}$$

$$30 \times 3 + y + 3 \times 35 = 231$$

$$90 + y + 105 = 231$$

$$y = 231 - 195$$

$$y = 36^{\circ}\text{C} \text{ Ans}$$