

General Instructions

1. Give numbering to headings
2. Do not write lengthy paragraphs. Write medium sized paragraphs with headings.
3. Do not use table for comparison and contrast questions.
4. Draw figures/diagram/flowchart where needed.
5. Start new question from fresh page.
6. Write unit of the answer in ability section.
7. Explain using mathematical steps and the reasoning for better score.
8. Change colour scheme for references to give them more visibility.
9. Manage time well.
10. Wide page borders are discouraged.
11. Avoid writing wrong references.
12. Give more weightage to expressedly asked part/s of the question.

Question 6 (B)

Paid at income tax 10%.
= 1500

What will be his real income = ?

Let original income

using percentage formula

$$\frac{10}{100} \times x = 1500$$

$$10x = 1500 \times 100$$

$$10x = 150000$$

$$x = 150000 / 10$$

$x = \text{Rs } 15000$ is the original salary

145

3

6

Question 6 (A)

Age of son now = 30 years

Age of father 5 years ago = 3x of son

What is father's age now = ?

Let the age of son 5 years ago

$$30 - 5 = 25 \text{ years}$$

Age of father at that time = 3x of son

$$25 \times 3 = 75 \text{ years}$$

Age of father now when age of son is 30

$$\rightarrow 75 + 5 = 80 \text{ age of son now after 5 years}$$

$$\rightarrow 75 + 5 = 80 \text{ age of father now of his son is of 30 now}$$

$$\boxed{\text{Son} = 30}$$

$$\boxed{\text{Father} = 80} \text{ now}$$

Years

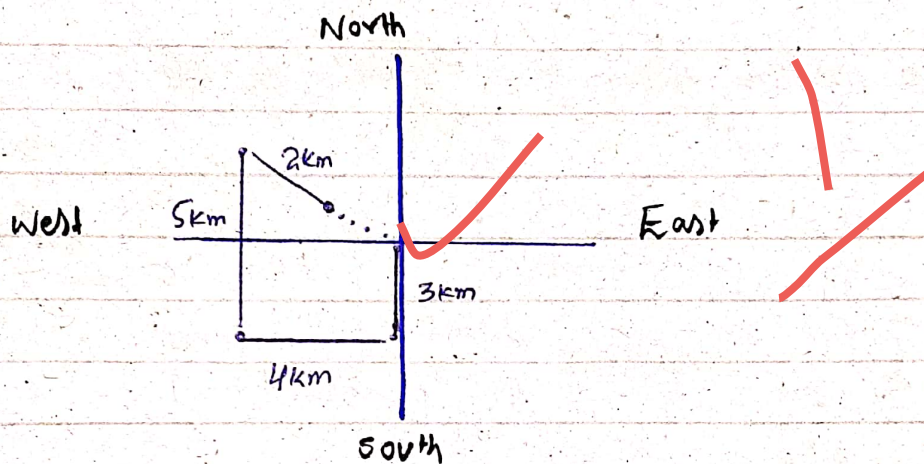
Question 8 (A)

Towards South = 3 km

Towards West = 4 km

Towards north = 5 km

Towards South-east = 2 km



Using - Pythagoras theorem

Perpendicular = 5 km

Base = 4 km

hypotenuse = ?

Hypotenuse = $\frac{\text{Perpendicular}}{\text{base}}$

$$= \frac{5}{4}$$

hypotenuse = 1.25 km from original point

Question 8 (c)

investment of Tahir = 15000
investment of Umar = 30000
investment of Usama = 45000
Net Profit = 406000

Let settle the due shares according to ratios of their investment.

Tahir	Umar	Usam
15000	30000	45000
1	2	3

So the profit will also be shared according to their ratios of investment

Profit = 406000 will be divided among all in ratio 1 : 2 : 3

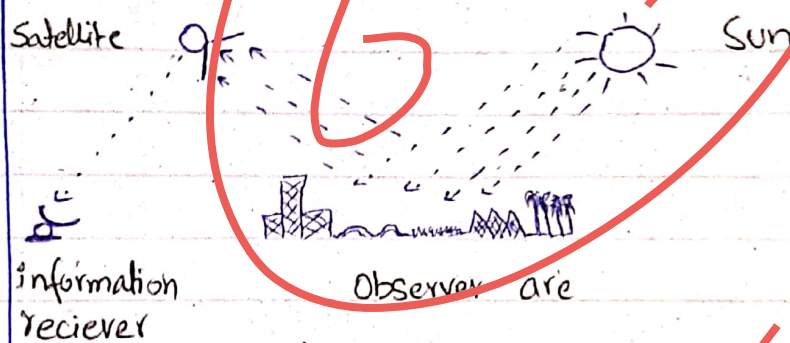
$406000 / 6 = 67666.6$ So the share will be

Tahir	Umar	Usman
1	2	3
<u>67666.6</u>	<u>135333.3</u>	<u>203000</u>

is the share respectively

Question 3 (B)

Remote sensing is done by using a group of satellites to sense the remote, hilly area, deserts, oceans, antarctic and many other places where human can not easily reach.



Role of remote sensing

Used to analyze the area deeply to study the nature of globe to analyze the conditions on any place of earth where humans can not reach easily. Played a great role in discovering amazing hidden truths of mother earth from Amazon, Antarctic to Sahara desert.

Applications in environmental Science

- used in environment monitoring
- Glaciers monitoring
- Forest watchout
- Used in agriculture
- Climate activity
- water resources

Detail?

Question 4 (A)

Artificial intelligence has revolutionized the world. it changed the pace of development and added accuracy to the system

- Artificial intelligence enabled the machines to think like humans
- Replaced the assembly lines in factories by digital robots
- one of the biggest assets of future.

"According to PwC's report: By 2030 AI will contribute 26% in global GDP and will capture 40% market share."

- AI in health department is doing a great job where it enabled humans to analyze different diseases and their symptoms

AI in forestry revolutionised the field by sensing condition of plants and alarming from future pesticides or biological attacks.

“The government of Jordan signed an agreement with a local company to check Palm trees through AI and aware them for future pesticides and other attacks.”

AI revolutionised the Industry

“According to world economic forum 1st industrial revolution used water and steam to run the machine, Second revolution used electrical energy, 3rd used electronics and information technology and the 4th is revolutionising industry through AI”

More detail?

Question 4 (D)

- A bond is a force of attraction between two atoms to form an element.
- electrons are shared to get stability

Ionic Bond

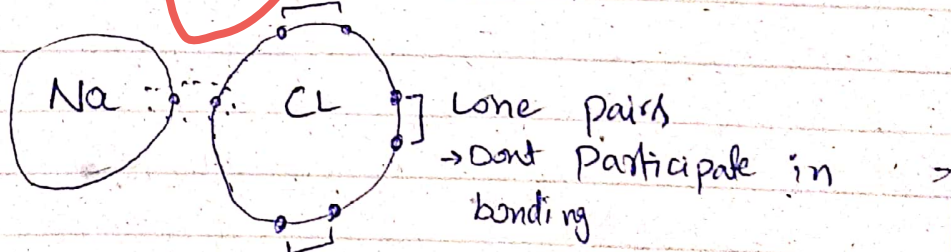
Ionic bond is a bond which is formed by ~~mutual~~ complete sharing of electrons between two atoms. **Transfer**

For example

The bonding between (Na) Sodium and (Cl) chloride.

Na have one electron in last shell

Cl have 7 electrons in last shell



Covalent bond

It is formed by the mutual sharing of electrons between two atoms.

For example the bonding between
(H) Hydrogen having one electron in last shell
(Cl) Chloride having Seven electrons in last shell

In covalent bond electron does not
completely shared but mutually by
both.

