

General Instructions

(M T W T F S)

DATE: _____

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 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. Should be reasonable.
11. Avoid writing wrong references.
12. Give more weightage to expressedly asked part/s of the question.

Name

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329

Paper

General Science & Ability

Part - II
SECTION - B

Q.6 Part a:

Given Data:

$$\text{Total amount} = \$370$$

Second part is $\frac{3}{4}$ of the third part

The ratio between the first and third part is 3:5.

Required:

Find each Part = ?

Solution:

$$\text{Total amount} = \$370$$

$$\text{Ratio b/w 1st \& 3rd} = 3:5$$

To find each part, first we have to add both the ratio.

$$\Rightarrow 3 + 5 = 8$$

Then divide \$370 by 8, to find each part.

$$\begin{array}{r}
 46.25 \\
 8 \overline{) 370} \\
 \underline{32} \\
 50 \\
 \underline{48} \\
 20 \\
 \underline{16} \\
 40 \\
 \underline{40} \\
 0
 \end{array}$$

So $\$370 \div 8 = \46.25

Now, according to the given condition
 First one has 3 parts in the
 given ratio, and each part is
 \$46.25 so;

$$\begin{array}{r}
 3 \times \$46.25 \\
 \hline
 \text{First} = \$138.75
 \end{array}$$

Now;

Third has 5 parts in the
 ratio so;

$$\begin{array}{r}
 5 \times 46.25 \\
 \hline
 = \$231.25
 \end{array}$$

According to the given condition
 Second part is $\frac{1}{4}$ of 3rd part, so;

$$\begin{array}{r}
 \frac{1}{4} (231.25) \\
 \hline
 \text{So Second part} = \$57.8
 \end{array}$$

Now third part is;

$$\$231.25 - \$57.8$$

$$= \$173.45$$

So Third has

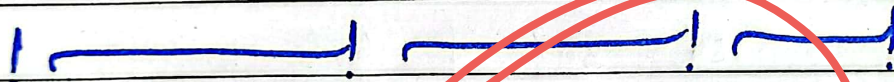
$$\boxed{\text{Third} = \$173.45}$$

Finally:

$$1^{\text{st}} + 2^{\text{nd}} + 3^{\text{rd}} = \$370$$

$$\$138.75 + 57.8 + \$173.45 = \$375$$

$$\$375 = \$375$$



Part b:

Given data:

Kashif required Rs. 800 for paying his fees.

He borrowed 20% from his brother.

He borrowed 30% of the remaining from his mother.

He had Rs. 200 in his bank account.

Required:

How much more does he need in Rs.?

Solution:

As total fees required is

Rs. 800.

Kashif borrowed 20% from his brother
so

20% of 800

$$\frac{20}{100} (800)$$

$$20 \times 8 \Rightarrow 160$$

$$\begin{aligned} \text{Remaining} &= 800 - 160 \\ &= 640 \end{aligned}$$

He borrowed 30% of the remaining
from his mother.

so 30% of 640

$$\frac{30}{100} (640)$$

$$64 \times 3 = 192$$

→ He had Rs 200 in his bank account

so in total he has;

$$160 + 192 + 200$$

$$\text{Total} = 552$$

And Total fees is 800 so;

$$\begin{aligned} \text{Total Fees} &= 800 - 552 \\ &= 248 \end{aligned}$$

so;

Kashif needs Rs. 248 more to
pay the fees.

Part C:

Given data:

1st bag contain = 3 red, & 7 black balls

2nd bag contain = 8 red and 3 black balls

3rd bag contain = 4 red and 6 black balls.

Required:

Find the probability that the drawn red ball is drawn from the 3rd bag?

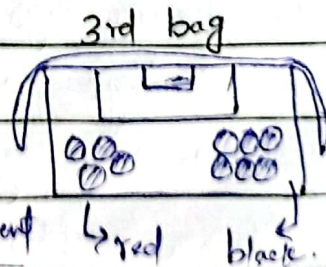
Solution:

The Given Condition stated that 1 of the bag is selected at random and a ball is drawn from it. If the ball drawn is red so, what is the probability that it is drawn from the third bag.

We know that,

Probability is

$$P(x) = \frac{\text{No. of occurrence of event}}{\text{Total no. of outcomes}}$$



here, no. of occurrence of an event is red balls in the 3rd bag which are 4.

And Total outcomes of 3rd bag are

10. (4 red balls + 6 black balls),

Now: According to the given formula:

$$P(\text{red}) = \frac{4}{10}$$

$$P(\text{red}) = \frac{2}{5}$$

$$P(\text{red}) = 0.4$$

So, the probability that the red ball is drawn from the 3rd bag is 0.4.

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Part d:

Given data:

The traffic lights at 1st road crossing change after 24 sec.

The traffic lights at 2nd road crossing change after 36 sec.

The traffic lights at 3rd road crossing change after 72 sec.

They all change simultaneously at 8:20:00 hrs;

Required:

At what time will all the traffic lights again change simultaneously?

Solution:

Traffic lights at three different road crossing change after 24 sec, 36 sec, and 72 sec, respectively.

If they all change simultaneously at 8:20:00 hr, then to find the next time, at which they simultaneously change, we have to find the L.C.M of all the 3-time

Duration:	24, 36, 72
	<u>2 12, 18, 36</u>
	<u>2 6, 9, 18</u>
	<u>3 3, 9, 9</u>
	<u>3 1, 3, 3</u>
	<u>1 1, 1, 1</u>

So $2 \times 2 \times 2 \times 3 \times 3$
 $= 72$ mins

equal to 1 hr & 12 mins

According to the given condition, all the traffic light simultaneously change at

8:00:00 hrs

Now add 1 hr & 12 mins to the previous time: the next time will be

9:12:00 hrs

So all the traffic lights again change simultaneously at 9:12:00 hrs

Question # 08

Part a:

Given Data:

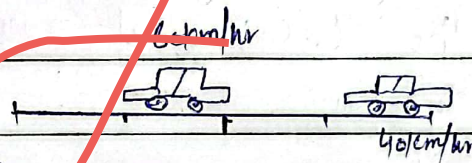
Speed of the car during first half of the Journey = 40 km/hr.

Speed of the car during 2nd half of the Journey = 60 km/hr

Required:

What is the average speed of a car?

Solution:



We know that:

The formula of Average is

$$\text{Average} = \frac{\text{Sum of Observations}}{\text{Total no. of Observations}}$$

Here we have an Observation of 40 km/hr and 60 km/hr, soth sum is

$$40 \text{ km/hr} + 60 \text{ km/hr}$$

$$\text{Sum} = 100 \text{ km/hr}$$

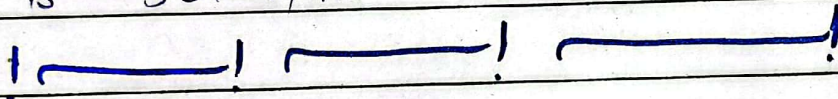
And total no. of Observations is 2.

So putting values in the above formula:

$$\text{Avg} = \frac{100 \text{ km/hr}}{2}$$

$$\text{Avg} = 50 \text{ km/hr}$$

So, the average speed of the car is 50 km/hr.



Q:8 Part b:

Given Data:

ROSE is coded as 6821

CHAIR is coded as 73456

PREACH is coded as 961473

Required:

What will be the code for SEARCH?

Solution:

ROSE is 6821, CHAIR is 73456,
and PREACH is 961473.

According to the pattern of the words and numbers, each alphabet is assigned a specific number

So by splitting each words, the alphabets corresponding to their number are as follows:

$R = 6$ $C = 7$ $P = 9$

$O = 8$, $H = 3$ $R = 6$

$S = 2$ $A = 4$, $E = 1$

$E = 1$ $I = 5$ $A = 4$

$R = 6$ $C = 7$

$H = 3$

Now, the number for SEARCH is

$S = 2$

$E = 1$

$A = 4$

$R = 6$

$C = 7$

$H = 3$

So the SEARCH will be coded as

214673

SEARCH → 214673

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Q: 8 Part - C:

Given Data:

A is brother of B

B is the sister of C

C is the father of D.

Required:

How D is related to A?

Solution:

Let suppose

Male is represented by "□"

Female is represented by "○"

Brother & sister is connected by "↔"

Husband & wife is connected by "="

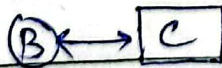
Now According to the Given

Condition:

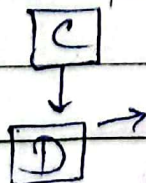
→ A is the brother of B



→ B is the sister of C

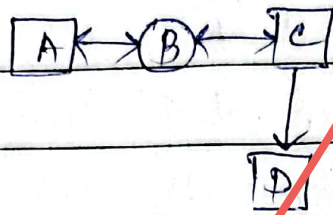


→ C is the father of D



According to given condition, D being a male member, so D is a male.

Now Combine the boxes.



So, According to the given diagram
A & C are brothers, and D is
the son of C.

So,

D is the Nephew of A.

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Q:8 Part-d:

Given Data:

Kashmala travels 35 km towards the
west.

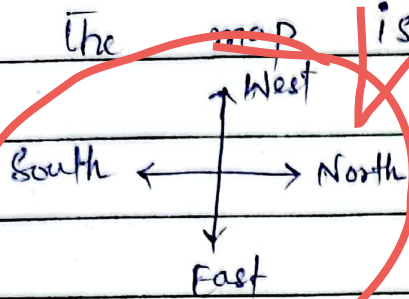
She takes a Right turn and travels
50 km.

She takes another right turn and
travels 35 km.

Required:

How far is she from her
original position?

Solution:

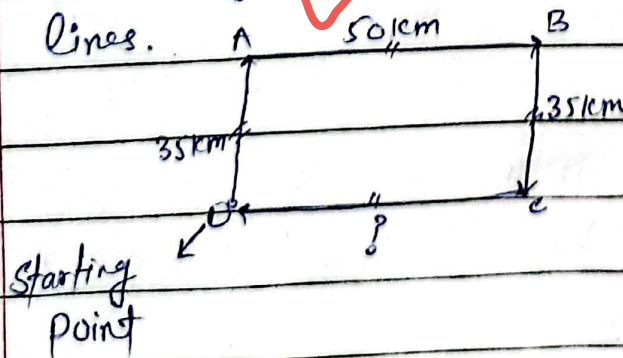


According to the given condition;
 → Kashmiri travels 35 km towards the West

→ She takes a right turn and travels 50 km more west.

→ She takes another right turn and travels 35 km in that direction.

→ Now to find, how far is she from her original position, combine all the lines.



→ The given figure is rectangle

and According to the properties of rectangle the corresponding sides are equal, means;

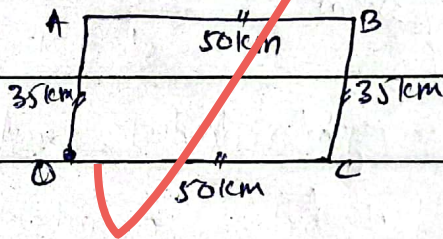
side OA & CB are equal.

&

side AB & OC are equal.

So, according to this property,

side OC is 50 km;



So, Kashmala is 50 km far from her original position.



Q:5 Part 9:

Write a note on Networking and Internet Standards.

Networking:

Networking is the physical or hardware part of the computer system. It is used for the connection of two or more than two computer system, and two or more than two physical devices of internet. It is used for the transferring of data. It consists of wires, Modems, switches, Routers, and computers etc.

Types of Networking:

There are different types of Networking; such as LAN, WAN, MAN etc.

i. Local Area Network:

Local Area Network is a type of Networking, which is used in local scale, and usually

in small areas.

For Example:

Example of Local Area Network includes, the network connections in homes, shops, and networking with in the building.

ii. Wide Area Network:

Wide Area Network is a type of Networking, which is used between the buildings of an institute. It is greater than Local Area Network, and covered more area.

For Example:

Example of Wide Area Network includes Universities, Hospitals, Schools, Colleges, large departments, which consists of buildings.

iii. Metropolitan Area Network:

Metropolitan Area Network is used on the global level, which covers countries, and continents.

For Example:

Example of MAN includes,
the net of cables among the
countries, and in the whole world.

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Q: 5, Part b:

What is Artificial Intelligence?
Write its pros and cons.

Artificial Intelligence:

Artificial Intelligence is a phenomenon associated with computer and internet. Artificial Intelligence is the training of a model with different datasets of images and videos, on the basis of the learning from the images and videos during its training, the model takes future decisions. Such intelligence of any model is referred as Artificial Intelligence.

For Example:

To design an AI-based app for X-rays (infected) detection. First we

train a model with different images of x-rays, both normal and infected, through different algorithms. Slowly the model is learning from each pixel of image and stored that information. Once the training is completed, and the app is developed, then, we simply upload an image in the app, and then model tells us, that either the x-ray is normal or infected.

Pros of Artificial Intelligence:

AI has many pros, and helps people in many fields.

i. AI-based Electric Vehicles, aeroplanes, and Rockets, reduces time, save money, and are the source of information:

- AI-based self driving cars, such as Tesla, and advanced automated aeroplanes helps people in safe and comfortable transportations and save their times and money. More over Rockets and satellite based on AI- are the

Source of information for humans.

ii. AI-Empowered drones helps and monitor security situations at different Occassions:

AI - Empowered drones are used for security purpose of such places in which human transportation is difficult. Such drones are used for monitoring at different Occassions, such as Seminars, Workshops, Conferences etc.

iii. AI-based APPs and Websites are used for Knowledge and Research, & Online Shopping:

AI-based model such as ChatGPT is used for Education purpose, and provides updated and accurate results, which saves time and money of students. Similarly AI-Empowered websites such as Daraz, OLX etc are used for Online shopping, which provides similar results according to the previous search.

Cons of Artificial Intelligence

Along with Cons Pros, AI- also has some Cons;

i. AI-based drones are also used for drug carrying and smuggling;

AI-based drones are used by criminals to carry drugs and smuggle illegal things. Recently Punjab Police caught a drone which smuggle drugs to India, so it the negative impact of AI.

ii. AI-model such as ChatGPT, reduces students Intellectual Ability:

ChatGPT provides ready-made materials to students, hence reduces students intellectual ability. After getting ready-made materials, students did not efforts further, and compromised their intellectual ability.