

Question No. 1

A): A cricket team . . . . . the year.

Percentage of total match won during the year by the cricket team =  $y = 60\%$  of  $x$

Total matches played during the year =  $x$

Number of matches drawn =  $c$

Number of matches lost = 24 matches

Percentage of matches lost =  $\frac{100\% - 60\%}{(Total - won)}$   
= 40%

40% of total matches = 24

$$\frac{40}{100} \times x = 24$$

$$x = \frac{24}{40} \times 100$$

$x = 60$

→ Total number of matches =  $x = 60$

→ Matches won by team =  $60\% \times x = \frac{60}{100} \times 60$

$y = 36$

→ Matches lost by the team =  $40\% \times x = 24$

70  
\$370  
70

**Proof**

Matches won by the team + Matches lost by the team = Total no. of matches

$$36 + 24 = 60$$

$$60 = 60$$

Since both sides are equal, it proves that the cricket team played 60 matches annually, won 36 matches and lost 24 matches while no matches were drawn.

**B) - If 30 persons ----- of sugar:**

Scenario A:

Number of person = a = 30 person  
Amount of sugar = b = 40 Kg  
Number of days = c = 10 days.

Scenario B:

No. of person = d = 80 person  
Amount of sugar = e = 320 Kg  
No. of days = x = x days.

Persons

Sugar

Days

↑  
30  
80  
Indicator

↑  
40kg  
320kg  
Indicator

↑  
10 days  
x  
Indicator

Since the relation between person and sugar consumed is direct, by increasing the amount of sugar and number of consumers, the number of days will automatically increase. Therefore

$$\frac{a \times b}{c} = \frac{d \times e}{x}$$

$$\frac{30 \times 40}{10} = \frac{80 \times 320}{x}$$

$$120 x = 25600$$

$$x = \frac{25600}{120}$$

$$x = 213.33$$

The number of days required to consume 320 kg of sugar by 80 person is 213.33 days approximately.

**Proof**

$$\frac{a \times b}{c} = \frac{d \times e}{x}$$

$$\frac{30 \times 40}{10} = \frac{80 \times 320}{213.3}$$

$$120 = 120$$

Hence proved!



c): Divide \$370 . . . . . each part.

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

$$\begin{array}{l} 1^{\text{st}} \text{ part} = x \\ 2^{\text{nd}} \text{ part} = y \\ 3^{\text{rd}} \text{ part} = z \end{array} \left. \vphantom{\begin{array}{l} 1^{\text{st}} \\ 2^{\text{nd}} \\ 3^{\text{rd}} \end{array}} \right\} \text{unknown.}$$

Conditions

$$\textcircled{1} \quad y = \frac{1}{4} z$$

$$\textcircled{2} \quad \frac{x}{z} = \frac{3}{5} \Rightarrow x = \frac{3}{5} z$$

Find each part.

$$x + y + z = \$370$$

substituting the values.

$$\frac{3}{5} z + \frac{1}{4} z + z = \$370$$

$$4 \times \left( \frac{3}{5} z \right) + \left( \frac{1}{4} z \right)^{\times 5} + \left( z \right)^{\times 20} = \$370$$

$$\frac{12z}{20} + \frac{5z}{20} + \frac{20z}{20} = \$370$$

$$\frac{12z + 5z + 20z}{20} = \$370$$

$$\frac{37z}{20} = \$370$$

$$z = \frac{370 \times 20}{37}$$

$$z = \$200$$

Since

$$y = \frac{1}{4}z$$

$$y = \frac{1}{4}(200)$$

$$y = \$50$$

Finding the value of  $x$

$$\frac{x}{z} = \frac{3}{5}$$

$$x = \frac{3z}{5}$$

$$x = \frac{3}{5}(200)$$

$$x = \$120$$

Therefore

$$x + y + z = \$370$$
$$120 + 50 + 200 = \$370$$

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$$\begin{aligned} \text{First part} &= x = \$120 \\ \text{Second part} &= y = \$50 \\ \text{Third part} &= z = \$200 \end{aligned}$$

Ques:

D): The arithmetic . . . . . was removed :

The arithmetic mean of six number = 20

Let the numbers be = a, b, c, d, e, f

if one number is removed i.e f = a (?)

The average of remaining 5 numbers = 15

Case 1: x

$$x = \frac{a + b + c + d + e + f}{6} = 20$$

$$x = (a + b + c + d + e + f) = 20 \times 6 = \underline{120}$$

Case 2:

$$y = \frac{a + b + c + d + e}{5} = 15$$

$$y = (a + b + c + d + e) = 15 \times 5$$

$$y = (a + b + c + d + e) = \underline{75}$$



If  $x$  is the collection of 6 numbers  
and  $y$  is the collection of 5 numbers  
then the value of  $f$  is,

$$x - y = f$$

$$120 - 75 = f$$

$$f = 45$$

Hence the number that was removed from  
the arithmetic equation was  $f = 45$

## Question No. 2

A): What are computer buses . . . . . Computer .

1. Introduction:

Computer is an electronic device that access and process data on the basis of algorithmic patterns. Computer buses are a set of parallel lines that transfer data between different components of computer i.e. input devices and output devices etc. The data flows in an electronic pathway within the computer and to / fro external devices. Central Processing unit is the brain of the computer and comprises of Arithmetic logic unit and control unit which operate the input and generate output.

## 2- Computer buses

A communication pathway connecting two or more devices building a physical connection between hardware of computer system is called computer buses.

## 3- Types

### System buses

#### Internal buses

⇒ part of motherboard that connects main components of computer i.e. memory etc.

- Data bus
- Address bus
- Control bus

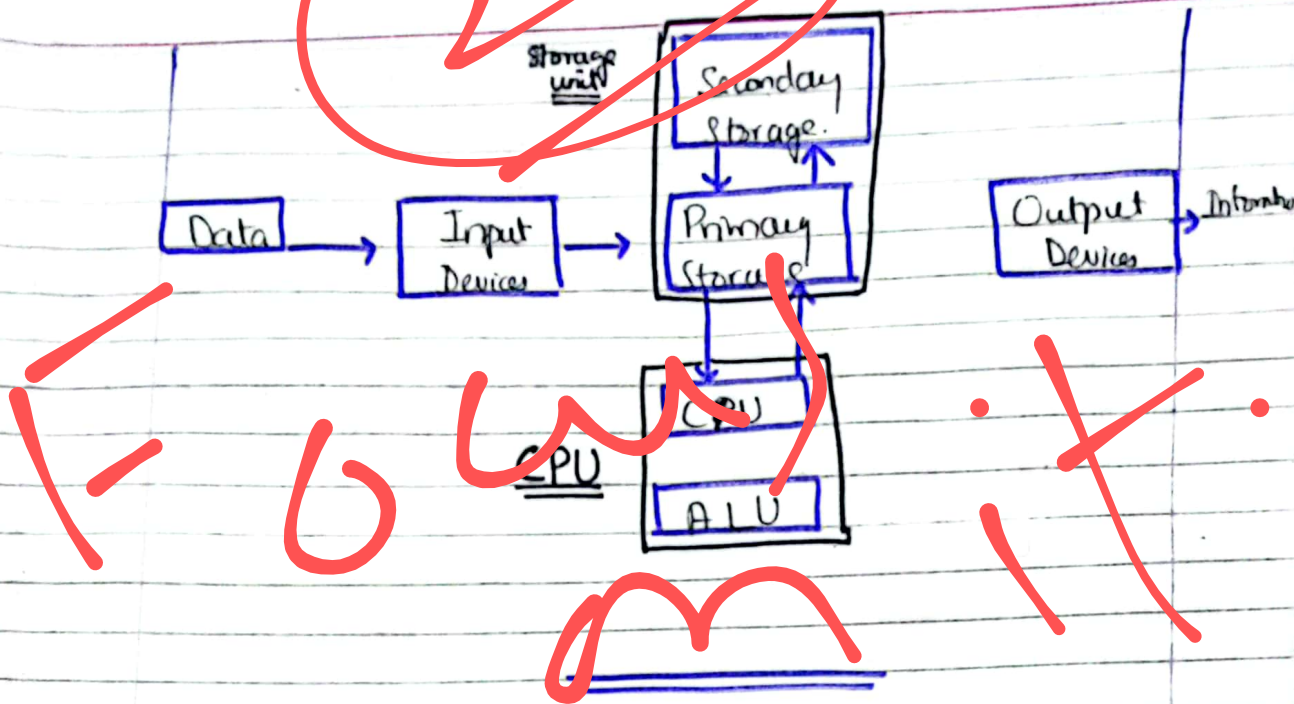
#### External buses

⇒ least External devices connected to the main computer through external electronic pathways.

## 4- CPU as the brain of computer

Central processing unit is a microprocessor chip that contains a million electronic connections to electrical components. It performs basic arithmetic functions, logical, control and other input/output operations on the basis of algorithmic patterns, therefore it is called the brain of computer.





B): Describe ----- speed.

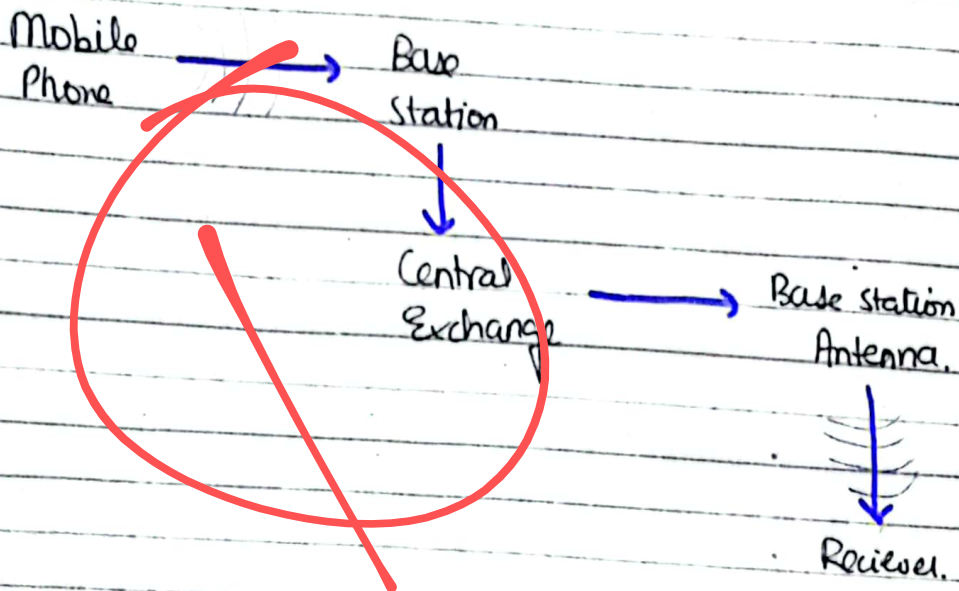
Computer classification by size, speed, memory:

1. Micro Computers: Smallest, less powerful and cheapest form of computer which perform variety of tasks such as research, communication etc. For example laptop.
2. Mini computers: Smaller and less powerful than mainframe computers used in scientific research, i.e. Engineering plants computer system.
3. Main Frames Computers: Large storage capacity but less powerful than super computers, used to handle scientific problems i.e. banks, hospitals, airports etc.
4. Super computers: Largest and fastest form of computer yet, expensive and used for advance scientific research i.e. nuclear projects etc.

## c) : How mobile phone works.

Working of a mobile phone :

A cellular phone is a telecommunication device that use radio waves in a network area to send and receive signals / information enabling calls, data transfer via internet.



The radio signals are sent to and from the receiver through the antennas that are located in different regions and attached to radio transmitters and receivers commonly known as Base station antennas. The receiver phone then receives the signals and convert it into information data.