

GSA - Test - 3

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Batch : 01 - ISB

Q-1

(b)

Solution:

Persons	Kgs of sugar	Days
↓ 30	↑ 40kg	10 ↑
↓ 80	↑ 320kg	x ↑

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

$$= \frac{30}{80} \times \frac{8}{1}$$

$$\frac{x}{10} = 3$$

$$x = 10 \times 3$$

$$\boxed{x = 30}$$

$$\text{Days} = 30$$

Hence, 80 people will use 320kg of sugar in 30 days.

(a)

Total matches won = 60%

Total matches lost = 24

no. of matches played = ? = x

If total matches won are 60% of x then total matches lost will be 40% of x so, 24 is 40% of x .

$$40\% \text{ of } x = 24$$

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

$$= \frac{4}{10} x = 24$$

$$\frac{2}{5} x = 24$$

$$2x = 24 \times 5$$

$$2x = 120$$

$$x = \frac{120}{2}$$

$$x = 60$$

So, total number of matches played during the year = 60

(d)

Solution

Arithmetic mean of 6 numbers = 20

Mean of 5 numbers = 15

Number that was removed = x

$$\text{Mean} = \frac{\text{Sum of all the numbers}}{\text{total number of values}}$$

First case;

$$\text{Mean} = 20, \text{ total values} = 6$$

putting values in formula;

$$20 = \frac{\text{Sum}}{6}$$

$$\text{Sum} = 20 \times 6$$

$$\text{Sum of 6 numbers} = 120 \quad \text{--- (i)}$$

Second case;

$$\text{Mean} = 15, \text{ total values} = 5$$

$$15 = \frac{\text{Sum of 5 values}}{5}$$

$$\text{Sum of 5 values} = 15 \times 5$$

$$\text{Sum of 5 values} = 75 \quad \text{--- (ii)}$$

We can find the removed number by subtracting (ii) from (i)

$$x = \text{Sum of 6 values} - \text{Sum of 5 values}$$

$$120 - 75$$

$$x = 45$$

Hence the removed number = 45

(C)

Solution

Total amount to be divided = \$370

Suppose 3 parts = x, y, z

Ratio b/w first and third part = $x:z = 3:5$

we can also write $x:z$ as $\frac{x}{z}$

So, $\frac{x}{z} = \frac{3}{5}$ — (i)

Second part = $y = \frac{1}{4}z$ — (ii)

$x + y + z = \$370$ — (iii)

From (i) we can find value of x

$x = \frac{3}{5}z$ — (iv)

Putting (ii) and (iv) in (iii)

$x + y + z = \$370$

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

taking l.c.m.

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

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

$37z = 370 \times 20$

$37z = 7400$

$z = \frac{7400}{37} = 200$

①

370
20
600
7400
7400
200
7400
7400

Hence, part of $z = \$200$.

Now, to find value of 'y' putting value of z in (ii)

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

$$y = \frac{200}{4}$$

$$y = 50$$

Hence, value of y / part of $y = \$50$

Now, to find x we can put value of y and z in eq (iii)

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

$$x + 50 + 200 = 370$$

$$x = 370 - 250$$

$$x = 120$$

Hence part of $x = \$120$

Q-2

(d)

Artificial Intelligence

Definition :

The term Artificial Intelligence was coined by John McCarthy and it can be defined as a system of intelligent machines specially computers, that'll be able to perform tasks like humans do.

Types:

AI can be defined as narrow and
• broad AI.

• Narrow AI only performs one type of task and gives output according to programmed inputs.

• Broad AI has the capability of inferring from input and giving output according to individual cases.

Ability of AI to outsmart humans:

It is possible for AI to outsmart humans but currently the control is in the hands of human beings however with advancement in machine learning and neural networks integration AI technologies like generative AI are

already out there performing tasks much faster and better than human beings.

ChatGPT 4.0, DALL-E are examples of generative AI.

- General Intelligence AI:

Currently, we see specific intelligent AI performing one specific task, if ^{scientists} people would be able to generate general intelligence AI - which is not far fetched - then it would be inevitable that AI would outsmart humans.

- Sentient AI:

The biggest threat to mankind right now is of sentient AI. If AI became self aware, the survival of mankind would be at stake.

(C)

Working of Mobile phone

Mobile or cell phone works by transmitting and capturing signals to and from transmitters or cell towers.

- Mobile phones operate through radio waves.
- Structures like microphone, speaker, display, RAM/ROM, battery etc are important in cell phones as they help in the conversion of signals into sound or photo or video.
- Microphone receives the sound waves converts them into electric signals which are transmitted through cellular towers.
- Battery provides power while RAM/ROM is the memory of the cell phone that stores information.
- Speaker converts the received signals into sound and makes one understand the signals.

(a)

Computer buses and CPU

Computer buses: Computer buses are a system that share information among other computers in a network and within a computer.

They have a system of nodes which are connected in a network

to share information. It could be star network, mesh network, ~~com~~ fully interconnected network etc.

CPU as a brain of Computer:

CPU or central processing unit is the brain of computer as without it a computer can not function.

- The main function of CPU is the processing of input data and conversion of input into output with the help of output devices, once the processing is done.
- CPU contains RAM/ROM, motherboard, voice card, graphic cards and all the other necessary components of a computer system.
- It reads the input, stores it in ROM while connects with the network and look for the answer of specific query to produce output.
- CPU is the control unit of a computer. It is involved in all systems of computer including system software.
- It is also responsible for Arithmetic calculations like sum, multiplication etc.