

GISA

Question no. 1.

c)

Solution

Let Share of A, B, C, D

$$A = 5x$$

$$B = 2x$$

$$C = 4x$$

$$D = 3x$$

C gets Rs. 100 more than D

$$C = 100 + D$$

$$4x = 100 + 3x$$

$$4x - 3x = 1000$$

$$x = 1000$$

B's Share = ?

$$B \text{ Share} = 2x$$

$$B = 2(1000)$$

$$B = 2000$$

So, Share of B is 2000

D)

Solution

Let one number is x and another number is y .

40% of a number is equal to two-third of another number

$$40\% \text{ of } x = \frac{2}{3}(y)$$

$$\frac{40}{100} \times x = \frac{2}{3} \times (y)$$

$$\frac{x}{y} = \frac{2}{3} \times \frac{100}{40}$$

$$\frac{x}{y} = \frac{2}{3} \times \frac{10^2}{4 \times 10}$$

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

$$x:y = 5:3$$

So, first number is 5 and
Second number is 3

B)

Solution

$$5\% \text{ of } A + 4\% \text{ of } B = \frac{2}{3}(6\% \text{ of } A + 8\% \text{ of } B)$$

$$\frac{5}{100} \times A + \frac{4}{100} \times B = \frac{2}{3} \left(\frac{6}{100} \times A + \frac{8}{100} \times B \right)$$

Multiply both sides by 3

$$3 \times \frac{5}{100} A + 3 \times \frac{4}{100} B = \cancel{3} \times \frac{2}{\cancel{3}} \left(\frac{6}{100} \times A + \frac{8}{100} \times B \right)$$

$$\frac{3}{20} \times A + \frac{3}{25} \times B = 2 \left(\frac{6}{100} \times A + \frac{8}{100} \times B \right)$$

$$0.15A + 0.12B = 2(0.06A + 0.08B)$$

$$0.15A + 0.12B = 0.12A + 0.16B$$

$$0.15A - 0.12A = 0.16B - 0.12B$$

$$0.03A = 0.04B$$

$$\frac{A}{B} = \frac{0.04}{0.03}$$

$$\frac{A}{B} = \frac{4}{\frac{3}{100}}$$

$$\frac{A}{B} = \frac{4}{100} \times \frac{100}{3}$$

$$\frac{A}{B} = \frac{4}{3}$$

$$A:B = 4:3$$

So, the ratio of $A:B = 4:3$

A)

Solution

unit digit is the last number of digit.

From 1 to 70

The unit digit with 1 are:

1, 11, 21, 31, 41, 51, 61

The unit digit with 9 are.

9, 19, 29, 39, 49, 59, 69

Total numbers = 7 + 7

$$= 14$$

Percentage = ?

$$\text{Percentage} = \frac{14}{70} \times 100$$

$$\text{Percentage} = 20\%$$

So, the percentage of a numbers are 20%.

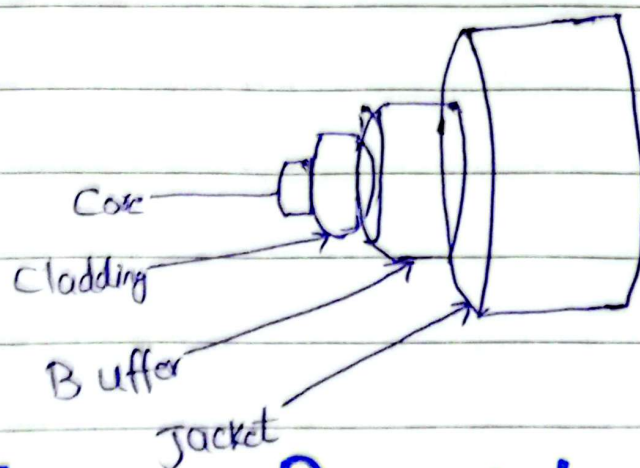
Question no. 2

B)

Optical Fibre

Optical fibre is a digital form of energy transfer in the form of light from one point to another through core, glass or plastics. Optical fibre has two types Single mode and multi mode fibres. It consist of four parts core, cladding, coating and jacket. Light

pass through the core which is usually made of glass. Core is surrounded by a layer of material called cladding. Cladding is enclosed in an other layer called buffer. Buffer is made of plastic. It is used to protect from physical damage. For extra coating jacket is used which is available in different size and color. Yellow colour represent single mode and orange colour represent multimode.



Working Principle.

Optical fibre works on the principle of total

internal reflection. When the light travels from denser medium (core) to a rare medium (cladding) at an angle greater than critical angle, it is reflected back into the core instead of passing out.

How it works?

① Light enter the core of the optical fibre at one end.

② The cladding around the core keep the light inside by continuous internal reflection.

③ The light signal carrying through the fibre carrying data to other end with minimum loss.

D)

a) RAM and ROM

RAM:

RAM is the abbreviation of random access memory. It is made up of small memory chips that form memory modules. These modules are installed in RAM slots. RAM stores data only when the machine is running.

ROM:

Read only memory is a memory containing hardware that the computer uses when it is booted up. ROM is non-volatile and the data store is permanent.

b)

Software

Software is a part of a computer that contains encoded information. It was

proposed by Alan Turing and used by W. Tukey in 1957.

Software includes computer programmes and data. web browser, Microsoft Excel are examples of software.

Hardware.

Hardware refers to the physical part of computer. It is used to run the software. Hard drive, mother board, printer, scanner, removable devices such as flash drive, CD are examples of hardware.

c) Computer bus

Computer bus is a source of communication that carries data, control signals and supply power to the computer.

c)

Working of cell phone

Cell phone is a wireless communication.

device that uses radio waves to transmit data. ✓

1) Conversion of sound

when a person speak, the microphone convert the sound wave into electrical signals which are converted into radio signals.

2) Transmission to cell tower

These signals are sent to cell tower.

3) Signal Routing.

The MSC (mobile Switching Centre) connects the signal to the receiver network on another mobile.

4) Reception

The receiver tower send the signals to their phone which convert it back into sound waves through speaker.

5) Continuous connectivity

while moving the signal is transferred

automatically from one tower to another a process called handover ensuring uninterrupted communication.

A)

Satellite launching method

A Satellite is an artificial or natural celestial body that orbit around a planet. Satellite is launched into space using powerful rockets which generate enough thrust to overcome Earth's gravity and place the satellite into orbit.

1) Rocket launch

A satellite is placed on a top of rocket which provides the thrust needed to escape Earth's gravity.

Escape velocity:

2) Stages of Launch

As the rocket ascend, it passes through

several stages, used fuel to reduce weight.

3) Reaching orbit

When the Rocket reached the desired altitude and velocity, it releases the Satellite into its orbit around the Earth.

4) Stabilization

Small thrusters adjust the satellite position and orientation to maintain a stable orbit.

Working Principle of GPS

GPS consists of a network of at least 24 satellites orbiting around the Earth transmitting signals. A GPS receiver on Earth calculates its exact position by measuring the time taking for signals from at least four satellites to reach it. The receiver determines

Day: _____

Date: _____

the distance from each satellite and find its latitude, longitude and altitude.

Tri-lateralization
Principle

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