

Question 02 (A)

Dalā:

two no: ratio = 3:5 ✓

9 is subtracted by each number

new number ratio 12:23

Required

The smaller no: = ?

Solution

Let two no: be $3x$ and $5x$

$$\frac{3x - 9}{5x - 9} = \frac{12}{23}$$

$$23(3x - 9) = 12(5x - 9)$$

$$69x - 207 = 60x - 108$$

$$69x - 60x = 108 - 207$$
$$+ 9x = -99$$

$$x = \frac{-99}{-3} = 33$$

$$\frac{3x}{5x} = \frac{3(33)}{5(33)} = \frac{33}{55}$$

The smallest no: = 33 ✓

QUESTION: 02: B

Data :

Partner A B C
Profit = 5 : 7 : 8
Duration = 14 m, 8m, 7m ✓

Required:

Ratio in investment

Solution

$$\text{Investment} = \frac{\text{Profit} \times \text{Total investment}}{\text{Individual share Duration}}$$

Partner A investment =

$$\text{Investment} = \frac{\text{Profit}}{\text{Time}}$$

Partner A B C

$$56 \times \frac{5}{14} : \frac{7 \times 56}{8} : \frac{8 \times 56}{7}$$

take LCM

$$\frac{20}{56}$$

$$\text{Investment} : 20 : 49 : 64$$

QUESTION NO: 02 (C)

Data:

Average weight of A, B, C = 45 kg

Average weight of A, B = 40 kg

" " " B, C = 43 kg

Required

Weight of B = ?

Solution =

$$\text{Average} = \frac{A + B + C}{3}$$

as B + C average weight = 43

there combine weight = $43 \times 2 = 86$ kg

as A + B average weight = $40 \times 2 = 80$ kg

$$\text{Total Weight} = A + B + B + C = 166$$

$$\text{Weight of } A + B + C = 45 \times 3 = 135 \text{ kg}$$

$$\begin{aligned} \text{Weight of } B &= \text{Weight of } A + B + B + C - A + B + C \\ &= 166 - 135 \\ &= 31 \end{aligned}$$

$$\boxed{\text{weight of } B = 31 \text{ kg}}$$

QUESTION: 02 (D)

Dalā:

A positive no. when increased by 17 is equal to 60 times reciprocal of that number

Solution

let the no. = x

let the reciprocal = $\frac{1}{x}$

$$x + 17 = \frac{60}{x}$$

$$x + 17 = -\frac{60}{x} = 0$$

$$\frac{x^2 + 17x - 60}{x} = 0$$

$$x^2 + 17x - 60 = 0$$

factors of $-60x^2 = -3x$ and $+20x$

$$x^2 - 3x + 20x - 60 = 0$$

$$x(x-3) + 20(x-3) = 0$$

$$(x-3)(x+20) = 0$$

$$x - 3 = 0$$

$$x + 20 = 0$$

$$x = +3, -20$$

The positive no. is "3".

QUESTION : 01. (A)

OPTICAL FIBER

Optical fiber refers to the medium and technology associated with the transmission of information as light pulses along a hollow glass tube or plastic wire or fibre.

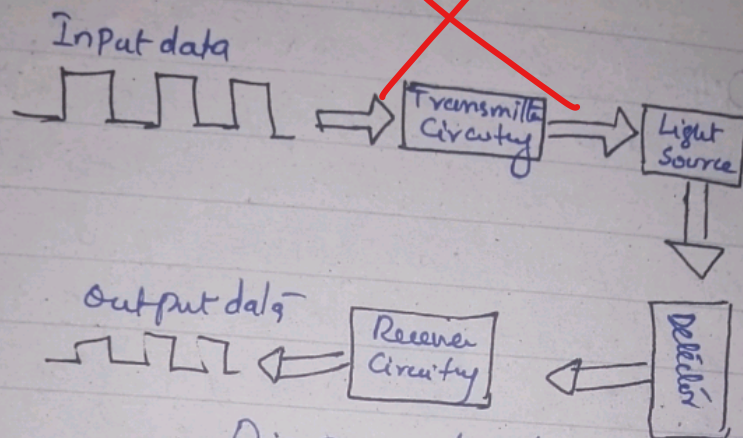
The principle of optical fiber communication network is discussed below.

WORKING PRINCIPLE OF OPTICAL FIBER:

(Total Internal Reflections)

Fiber optics transmission involves transmission of signals in the form of light from one point to other. Fiber optic communication network consist of transmitting and receiving circuitry, a light source and detector devices. When input data in the form of electric signal, is given to transmitter circuitry, it converts them into light signal with the help of light signal source. The beam of light is carried by a fiber optic cable to

to the destination circuitry where information is transmitted back to the electric signal by a receiver circuit.



Diagrammatical Representation of Process of Communication through Optical Fibre.

Importance Of OPTICAL FIBER:

Fibers optics power high definition TV, online gaming enhancing user experience with uninterrupted services. It enables high speed internet, data transmission, it support in medical transmission treatments like laser surgery. It ensure secure data transfer for sensitive applications and reduce long term costs in communication infrastructure.

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QUESTION NO: 1. (D)

RAM

1- Random access memory

2- made up of small memory chips that form a memory module.

3- volatile memory used for temporary data storage

4- It loses data when computer is turned off.

5- Read and write operations are possible.

6- Example:
DDR4
DDR5
(modern RAM modules)

ROM.

Read only memory

Contains hard wired instructions that computer uses when start up.

Non volatile memory used for permanent data storage

It retains data even when power is off.

Data is pre written, can only read.

Example
BIOS

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QUESTION: 02.
(B)

CELL PHONE COMMUNICATION THROUGH BLOCK DIAGRAM:

Communication is process of exchanging information by sending electric signals. They could be wired or wireless.

