Question 02. (A)

Data:

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 $5x$

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

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

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

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

$$+9x = +99$$

$$x = \frac{99}{3} = 11.$$

$$\frac{3x}{5x} = \frac{3(11)}{5(11)} = \frac{33}{55}$$

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

$$\text{Investment} = \frac{\text{Profit} * \text{~~Total investment time~~}}{\text{Individual share Duration}}$$

~~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.

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

Investment = 20 : 49 : 64

QUESTION NO: 02 (C)

Data:

Average weight of A, B, C = 45kg
Average weight of A, B = 40kg
" " " B, C = 43kg

Required

Weight of B = ?

Solution:

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

as B + C average weight = 43
there combine weight = 43 × 2 = 86kg
as A + B average weight = 40 × 2 = 80kg

Total Weight = A + B + B + C = 166

Weight of A + B + C = 45 × 3 = 135 kg

Weight of B = Weigh of A + B + B + C − A + B + C =
= 166 − 135
= 31

Weight of B = 31

QUESTION: 02 (D)

Data:

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 $+20x$

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

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

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

$$x - 3 = 0$$

$$x + 20 = 0$$

$$x = +3, \quad -20$$

The positive no: is "3".

QUESTION : 01. (A)

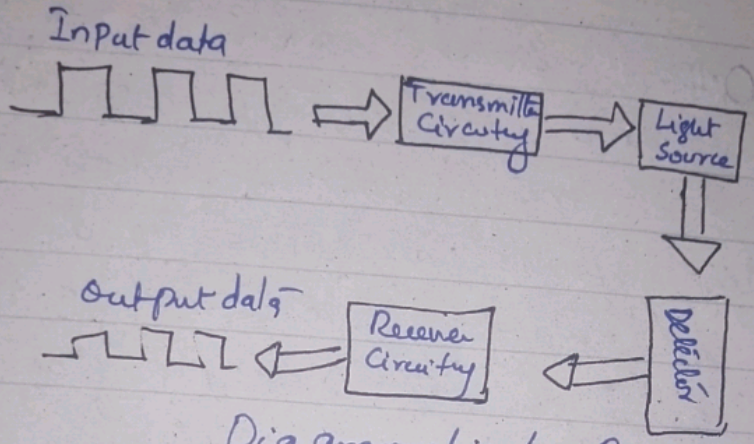
OPTICAL FIBER

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:

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 circuity, a light source and detector devices. When input data in the form of electric signal, is given to transmitter circuity, 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.



Diagrametical 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.

QUESTION NO: 1. (D)

	RAM	ROM.
1-	Random access memory	Read only memory
2-	made up of small memory chips that form a memory module.	Contains hard wired instructions that Computer uses when start up.
3-	Volatile memory used for temporary data storage	Non volatile memory used for permanent data storage
4-	It looses data when computer is turned off.	It retains data even when power is off.
5-	Read and write operations are possible.	Data is pre written, can only read.
6-	Example: DDR4 DDR5 (modern RAM modules)	Example BIOS

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.