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SECTION II

Q6:-

Part A:-

First we will calculate
the volume

$$\text{Volume} = \text{length} \times \text{Breadth} \times \text{Depth}$$

$$\text{Volume} = 300 \text{ cm} \times 200 \text{ cm} \times 1 \text{ cm}$$

$$\boxed{\text{Volume} = 60,000 \text{ cm}^3}$$

$$\text{As density} = \rho = \frac{m}{V} \Rightarrow \boxed{\rho \times V = m} \text{ eq (1)}$$

here $\rho = \text{density of water}$

which = 1 g/cm^3 • putting in eq (1)

$$\text{so } = 1 \frac{\text{g}}{\text{cm}^3} \times 60,000 \text{ cm}^3 = m$$

$$\text{so } m = 60,000 \text{ g}$$

$$\boxed{m = 60 \text{ kg}}$$

As it is when the man sink
the water is displaced so mass of = mass of
displaced water man
so Mass of man = 60 kg Ans

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Q 23

Solution:-

$$= \text{Selling price of 17 balls} = 720 \text{ Rs [eq (1)]}$$

$$= \text{Loss} = \text{cost price of 5 balls} - \text{eq (2)}$$

Let the cost of one ball = x

So eq (1) & (2) would be

$$\text{Selling price of 17 balls} = 17x = 720 \text{ Rs}$$

& eq (2)

$$\text{cost price of 5 balls} = 5x = \text{Loss} - \text{eq (3)}$$

and

$$\text{Loss} = \text{Cost price} - \text{Selling price}$$

$$\text{Here Loss} = 5x \text{ [from - eq (3)]}$$

$$5x = \text{Cost price} - 720 \text{ Rs of 17 balls}$$

$$5x = 17x - 720 \text{ Rs}$$

$$720 = 17x - 5x$$

$$720 \text{ Rs} = 12x$$

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$$x = 60 \text{ Rs}$$

so cost of one ball

$$= 60 \text{ Rs}$$

and cost of 17 balls
would be

$$= 17x = 17(60) = 1020$$

and cost of 5 balls = $5x = 5(60) = \underline{300}$

so

$$\text{C.O.P} = 1020 \text{ Rs}$$

$$\text{S.O.P} = 720 \text{ Rs}$$

$$\text{Loss} = 300 \text{ Rs}$$

Verified

Part C

Let

Age of man = x
 Age of son = y

Presently

$$\boxed{x = y + 24} \text{ --- eq ①}$$

After 2 year.

$$2 + x = 2(y + 2)$$

$$x + 2 = 2y + 4$$

$$\boxed{x = 2y + 2} \text{ --- eq ②}$$

Comparing eq ① & eq ②

$$y + 24 = 2y + 2$$

$$\boxed{22 = y}$$

So the present age of
 son = 22 and of father
 is 46.

After 2 years, $x = 48$, $y = 24$.

Ans

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Paul D.

$$\begin{aligned} \text{Rashid takes} &= 6x = 32 \text{ pages} \\ x &= 5.33 \text{ pages/hour} \end{aligned}$$

$$\begin{aligned} \text{Kamran takes} &= 5y = 40 \text{ pages} \\ y &= 8 \text{ pages/hour} \end{aligned}$$

$$\begin{aligned} \text{Both Kamran \& Rashid} &= x + y \\ &= (5.33 + 8) \text{ pages/hour} \\ &= 13.33 \text{ pages/hour} \end{aligned}$$

Whereas.

$$\text{Assignment} = \boxed{110 \text{ pages}}$$

$$\begin{aligned} 30 \text{ hours would be} &= \frac{\text{Total pages}}{(x+y) \text{ pages/hour}} \end{aligned}$$

$$= \frac{110 \text{ pages}}{13.33 \text{ pages/hour}}$$

$$\text{Time required} = 8.25 \text{ hours}$$

Answer.

Q No. 7)

①

As the formula of simple interest

$$S.I = P \times R \times T$$

$$\text{Simple interest} = \frac{\text{Principle} \times \text{Rate} \times \text{Time}}{\text{Amount}} / 100$$

So putting values

$$S.I = 432$$

$$P = 1200$$

$$= 432 = \frac{(1200 \times R \times T)}{100}$$

Let $R = x$, also $T = x$

$$432 = \frac{(1200 \times x \times x)}{100}$$

$$432 = 12x^2$$

$$x^2 = 36$$

$$x = 6$$

So $R = 6\%$, $T = 6$ years

Ans

B)

Avg Visitors on Sunday = 510 visitor/day
 Avg visitors on other days = 240 visitor/day

Total days = 30

As per condition the month starts with Sunday so in 5 Sunday will occur in Monday

Total composition of days = 5 Sundays + 25 other day

Putting values

$$\text{Total visitors} = (5 \times 510) + (25 \times 240)$$

$$= 2550 + 6000$$

$$= 8550 \text{ visitors/month}$$

and for per day, directly with 30, we have.

$$\text{Avg for one day} = \frac{8550}{30} = 285 \text{ visitor/day}$$

Ans

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Q:- let one number = x & other number = y

As per condition

$$-(40\%)(x) = \left(\frac{2}{3}\right)y$$

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

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

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

$$= \frac{3}{10} = \frac{y}{2x}$$

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

$$= \frac{6}{10} = \frac{y}{x}$$

$$= 6:10 = y:x$$

or $\boxed{10:6 = x:y}$ $\boxed{\text{Ans}}$

D8

Two dices mean = $\frac{1}{6} \times \frac{1}{6}$

$$\frac{\text{Total probability of outcomes}}{=} = \frac{1}{36}$$

∴ Dice have following six numbers = 1, 2, 3, 4, 5, 6
 three even, three odd
 and

even numbers when ^{multi} applied with any natural number will get even number.

$$\text{So } [2, 4, 6] = \frac{4 \times 3}{6 \times 3} = \frac{12}{18} \quad \text{--- eq (1)}$$

Whereas odd number when multiplied with even number can get even answer

$$\text{So } [1, 3, 5] = \frac{3 \times 3}{6 \times 3} = \frac{9}{18} \quad \text{--- eq (2)}$$

$$\text{Combining eq (1) \& (2)} = 12 + 9 = 21$$

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So 27 outcomes will
be even ones out
of 36 possible.

$$\text{So} = \text{Probability} = \frac{27}{36}$$

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

$$= 0.75$$

or 75% chance to
get even number
