

SOLUTIONS

Q1. $\frac{x}{0.9} = 150 + 0.3$

$\Rightarrow x = 0.9 \times 150.3$

$\Rightarrow x = 135.27$

Ans. (C)

Q2. $\frac{5}{100} \times 100\% = 5\%$

Ans. (C)

Q3. $\frac{20 + 0 + 30 + 40}{4} = \frac{90}{4} = 22.5$

Ans. (A)

Q4. 3 Men = 6 Boys
or 1 Man = 2 Boys

$\Rightarrow 4 \text{ Men} + 4 \text{ Boys} = 12 \text{ Boys}$

6 Boys can complete in 8 days

$\Rightarrow 12 \text{ Boys can complete in 4 days}$

Ans. (D)

Q5. Number of cubes = $\frac{20 \times 20 \times 20}{5 \times 5 \times 5} = 64$

Ans. (B)

Q6. Speed = $\frac{45}{9} = 5 \text{ km/hr}$

New Speed = $3 \times 5 = 15 \text{ km/hr}$

$\Rightarrow \text{Time taken} = \frac{60}{15} = 4 \text{ hr}$

Ans. (E)

Q7. (D)

Q8. Number of girls = 10

Total = 25

$\Rightarrow \text{Percentage} = \frac{10}{25} \times 100 = 40\%$

Ans. (A)

Q9. (A)

$$Q10. \frac{40 \times \frac{4}{10} \times \frac{4}{100}}{4+1} = \frac{40 \times 4 \times 4}{10 \times 100 \times 5} = 0.128$$

Ans. (E)

Q11. Prime numbers are {2, 3, 5, 7, 11, 13, 17, 19, 23 }

$$\Rightarrow \text{Probability} = \frac{9}{25}$$

Ans. (C)

Q12. 1 min 12 sec = 72 sec.

$$1 \text{ hr} = 3600 \text{ sec.}$$

$$\text{Percentage} = \frac{72}{3600} \times 100\% = 2\%$$

Ans. (B)

Q13.

$$4 \times x = x^3$$

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

$$x^2 = 4$$

$$x = 2$$

Ans. (A)

Q14

$$2^{x+3} = (2^3)^2$$

$$2^{x+3} = 2^6$$

$$x+3 = 6$$

$$x = 3$$

Ans. (A)

Q15.

$$\sqrt{2 \times 18} = \sqrt{36} = 6$$

Ans. (A)

Q16. Original area = 50 x 100

$$= 5000 \text{ cm}^2$$

$$\text{New length} = 100 - 20 = 80 \text{ cm}$$

$$\text{New breadth} = 50 - 5 = 45 \text{ cm}$$

$$\Rightarrow \text{New area} = 80 \times 45$$

$$= 3600 \text{ cm}^2$$

$$\Rightarrow \text{decrease in area} = 5000 - 3600$$

$$= 1400 \text{ cm}^2$$

$$\% \text{ decrease} = \frac{1400}{5000} \times 100 = 28\%$$

Ans. = 28%

Q17

$$\begin{aligned}\frac{a^4 - b^4}{a - b} &= \frac{(a^2 - b^2)(a^2 + b^2)}{a - b} \\ &= \frac{(a - b)(a + b)(a^2 + b^2)}{a - b} \\ &= (a + b)(a^2 + b^2)\end{aligned}$$

Q18. S.I. = Rs 1600

$$\begin{aligned}\Rightarrow P &= \frac{\text{S.I.} \times 100}{R \times T} = \frac{1600 \times 100}{4 \times 4} \\ &= \text{Rs } 10000\end{aligned}$$

$$\begin{aligned}C.I. &= P \left[1 + \frac{R}{100} \right]^n - P \\ &= 10000 \left[1 + \frac{10}{100} \right]^4 - 10000 \\ &= 14641 - 10000 \\ &= \text{Rs. } 4641\end{aligned}$$

Q19. Volume of fountain pen

$$\begin{aligned}&= \frac{22}{7} \times \frac{5}{20} \times \frac{5}{20} \times 7 \\ &= \frac{11}{8} \text{ cm}^3\end{aligned}$$

Volume of bottle of ink

$$\begin{aligned}&= \frac{1}{5} l \\ &= \frac{1000}{5} \text{ cm}^3 \\ &= 200 \text{ cm}^3\end{aligned}$$

Number of words

$$\begin{aligned}&= 200 \times \frac{8}{11} \times 330 \\ &= 48000\end{aligned}$$

Q20. Total number of outcomes = $6^2 = 36$

Favourable outcomes are

(1, 1), (1, 3), (1, 5), (2, 2), (2, 4), (2, 6), (3, 1), (3, 3), (3, 5), (4, 2), (4, 4), (4, 6),
(5, 1), (5, 3), (5, 5), (6, 2), (6, 4), (6, 6)

\Rightarrow Probability =

$$\frac{18}{36} \text{ or } \frac{1}{2}$$