

ANSWER SET - 57

01. (3) 02. (1) 03. (2) 04. (4) 05. (2)
 06. (1) 07. (2) 08. (1) 09. (1) 10. (3)
 11. (2) 12. (1) 13. (3) 14. (1) 15. (2)
 16. (2) 17. (2) 18. (1) 19. (2) 20. (4)
 21. (4) 22. (1) 23. (3) 24. (4) 25. (4)
 26. (4) 27. (3) 28. (3) 29. (3) 30. (4)
 31. (3) 32. (4) 33. (1) 34. (4) 35. (3)
 36. (3) 37. (1) 38. (4) 39. (3) 40. (1)
 41. (3) 42. (4) 43. (2) 44. (2) 45. (3)
 46. (2) 47. (4) 48. (1) 49. (1) 50. (4)
 51. (3) 52. (4) 53. (3) 54. (4) 55. (1)
 56. (3) 57. (2) 58. (1) 59. (2) 60. (3)
 61. (2) 62. (4) 63. (2) 64. (2) 65. (2)
 66. (1) 67. (2) 68. (1) 69. (3) 70. (3)
 71. (3) 72. (1) 73. (4) 74. (2) 75. (2)
 76. (3) 77. (1) 78. (1) 79. (2) 80. (3)
 81. (2) 82. (3) 83. (1) 84. (4) 85. (4)
 86. (4) 87. (1) 88. (4) 89. (2) 90. (1)
 91. (3) 92. (2) 93. (2) 94. (4) 95. (2)
 96. (1) 97. (3) 98. (2) 99. (4) 100. (3)

EXPLANATION - 57

1. (3) Sanitation keeps illness away and care keeps accident away.
 2. (1) As, G r t k K t r G
 a b c d d c b a
 Similarly, F j b H **H b j F**
 a b c d d c b a

3. (2) As, $\begin{matrix} 20 & & 11 \\ & \nearrow & \uparrow \\ & +2+1 & \end{matrix}$
 Similarly, $\begin{matrix} 102 & & 52 \\ & \nearrow & \uparrow \\ & +2+1 & \end{matrix}$

4. (4) Chemical formula is possible only for water (H₂O).
 5. (2) $\begin{matrix} E & C & B & Y & & G & E & D & A & & W & U & T & O \\ \downarrow & \downarrow & \downarrow & \downarrow & & \downarrow & \downarrow & \downarrow & \downarrow & & \downarrow & \downarrow & \downarrow & \downarrow \\ -2 & -1 & -3 & & & -2 & -1 & -3 & & & -2 & -1 & -3 & \\ R & T & U & X & & & & & & & & & & \\ \downarrow & \downarrow & \downarrow & \downarrow & & & & & & & & & & \\ +3 & +1 & +3 & & & & & & & & & & & \end{matrix}$

6. (1) $\begin{matrix} 52 & 61 & 43 & 54 & 72 & 83 & 18 & 29 \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ +9 & +11 & +11 & +11 & & & & \end{matrix}$
 7. (2) Franchise → Frantic → Fraternity → Fraudulent → Fraught
 8. (1) H I J H / H I J H / H I J H / H I J H

9. (1)
 Neha is the daughter of Mithilesh and his wife. Neha is the sister of Mithilesh's son. Mithilesh's son is the brother of Mithilesh's daughter. Mithilesh's daughter is the wife of Mithilesh's son.

10. (3) X > W > Y - (i)
 Z > Y - (ii)
 From (i) and (ii), we have, Y is the shortest among all.
 11. (2) $\begin{matrix} & -3 & & -3 & & 3 & & -3 & \\ & \downarrow & & \downarrow & & \downarrow & & \downarrow & \\ C & A & R & G & C & O & K & E & L & O & G & I & S & I & F \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ +4 & +4 & +4 & +4 & +4 & +4 & +4 & +4 & +4 & +4 & +4 & +4 & +4 & +4 \\ +2 & +2 & +2 & +2 & +2 & +2 & +2 & +2 & +2 & +2 & +2 & +2 & +2 & +2 \end{matrix}$

12. (1) $\begin{matrix} 100 & 50 & 52 & 26 & 28 & 14 & 16 & 8 \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ +2 & +2 & +2 & +2 & +2 & +2 & +2 & +2 \end{matrix}$
 13. (3) PAVEMENT

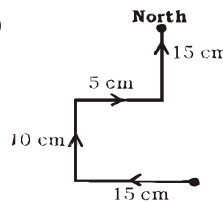
14. (1) S Y S T E M
 $\begin{matrix} -\downarrow & -\downarrow & -\downarrow & -\downarrow & -\downarrow & -\downarrow \\ R & X & R & S & D & L \end{matrix}$

- $\begin{matrix} C & O & R & R & E & C & T \\ -\downarrow & -\downarrow & -\downarrow & -\downarrow & -\downarrow & -\downarrow & -\downarrow \\ B & N & Q & Q & D & B & S \end{matrix}$

15. (2) 9 A 2 B 6 D 4 C 2
 $9 + 2 \times 6 - 4 \div 2$
 After putting the signs as per the given details,
 $9 + 12 - 2 = 19$

16. (2) $4 \times 3 \Rightarrow 4 + 3 = 7 \Rightarrow 7 \times 2 = 14$
 $5 \times 4 \Rightarrow 5 + 4 = 9 \Rightarrow 9 \times 2 = 18$
 $6 \times 5 \Rightarrow 6 + 5 = 11 \Rightarrow 11 \times 2 = 22$
 $7 \times 6 \Rightarrow 7 + 6 = 13 \Rightarrow 13 \times 2 = 26$

17. (2) $12 = 8 + 4, 100 = 44 + 56$
 18. (1)



19. (2)

- I. ×
 II. ✓
 ∴ Only conclusion II follows

20. (4)
 21. (4)
 22. (1)
 23. (3)
 24. (4)
 25. (4)

51. (3) $\begin{matrix} \text{Koushik} - X & & & & Y \\ & \searrow & & \nearrow & \\ & & XY & & \\ & \nearrow & & \searrow & \\ \text{Krishnu} - Y & & & & X \\ & & & & \frac{X}{X+Y} \end{matrix}$

- Time taken by them
 $= \frac{XY}{X+Y}$ days

52. (4)

- ATQ,
 $\frac{2}{3} \pi (8^3 - 4^3) = \frac{1}{3} \pi \times 8 \times 8 \times H$
 $\Rightarrow H = 14$ cm

53. (3) ATQ, 2% = 15

- $100\% = \frac{15}{2} \times 100 = ₹ 750$
 ∴ Marked price = ₹ 750

54. (4) Distance = $(45 - 40) \times \frac{45}{60}$
 $= 5 \times \frac{45}{60} = 3.75$ km

55. (1) $x + 5 + \frac{1}{x+1} = 6$
 Subtract '4' both sides,
 $x + 5 + \frac{1}{x+1} - 4 = 6 - 4$
 $\Rightarrow x + 1 + \frac{1}{x+1} = 2$

- Taking cube on both sides,
 $(x+1)^3 + \frac{1}{(x+1)^3} + 3 \times 2 = 8$
 $\Rightarrow (x+1)^3 + \frac{1}{(x+1)^3} = 8 - 6 = 2$

56. (3) $a^2 + 1 = 9a$
 $\Rightarrow a + \frac{1}{a} = 9$

- Square both sides,
 $a^2 + \frac{1}{a^2} = 9^2 - 2 = 81 - 2 = 79$

57. (2) $n = 4x + 3$
 $\Rightarrow 2n = 8x + 6$
 $\Rightarrow 2n = 8x + 4 + 2$
 ∴ Remainder = 2

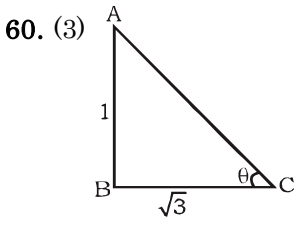
58. (1) Let the average contribution = ₹ x
 ATQ,
 $\frac{800 + x + 50}{9} = x$

- $\Rightarrow 9x = 850 + x$
 $\Rightarrow x = 106.25$
 ∴ Average contribution = ₹ 106.25

59. (2) $\frac{1}{a} + \frac{1}{b} + \frac{1}{c} = \frac{71}{abc}$
 $\Rightarrow \frac{ab + bc + ca}{abc} = \frac{71}{abc}$

- $\Rightarrow ab + bc + ca = 71 \dots(i)$
 $a + b + c = 15$
 Squaring both sides,
 $a^2 + b^2 + c^2 + 2(ab + bc + ca) = 225$
 Putting the value of $ab + bc + ca = 71$
 $\Rightarrow a^2 + b^2 + c^2 + 2 \times 71 = 225$
 $\Rightarrow a^2 + b^2 + c^2 = 83 \dots(ii)$

$\Rightarrow a^3 + b^3 + c^3 - 3abc = (a + b + c)$
 $[a^2 + b^2 + c^2 - (ab + bc + ca)]$
 Putting the value from equ.
 (i) and (ii),
 $a^3 + b^3 + c^3 - 3abc = 15(83 - 71) =$
180



$\tan \theta = \frac{1}{\sqrt{3}}$
 $\Rightarrow \tan \theta = \tan 30^\circ$
 $\Rightarrow \theta = 30^\circ$

61. (2) Net rate for S.I = $5 \times 2 = 10\%$

Net rate for C.I. = $5 + 5 + \frac{5 \times 5}{100}$

= 10.25%

A.T.Q.,

$\Rightarrow 10.25\% = \frac{50}{10} \times 10.25 = 51.25$

\therefore Compound Interest = **₹51.25**

62. (4) $\sin \theta = \frac{\sqrt{3}}{r}$

$\Rightarrow \sin^2 \theta = \frac{3}{r^2}$... (i) $\cos \theta = \frac{1}{r}$

$\Rightarrow \cos^2 \theta = \frac{1}{r^2}$... (ii)

From equation (i) and (ii),

$\sin^2 \theta + \cos^2 \theta = \frac{3}{r^2} + \frac{1}{r^2}$

$\Rightarrow 1 = \frac{4}{r^2} \Rightarrow r^2 = 4 \Rightarrow r = 2$

$\therefore \sin \theta = \frac{\sqrt{3}}{2}$

$\Rightarrow \sin \theta = \sin 60^\circ \Rightarrow \theta = 60^\circ$

63. (2) $\frac{B}{A+C} = \frac{5}{13}$

A.T.Q.,

18 units = ₹1620

5 units = ₹450

\therefore share of B = **₹ 450**

64. (2)

C.P. $\xrightarrow{+20\%}$ M.P.

100 120

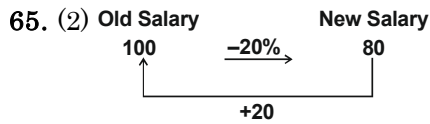
\swarrow ↘

P = 8% \rightarrow SP \rightarrow D = ₹ 12

108

Discount percentage

$= \frac{12}{120} \times 100 = 10\%$



\therefore Required Percentage

$= \frac{20}{80} \times 100 = 25\%$

67. (2) $(1 + \tan^2 \theta) (1 - \sin^2 \theta)$

$= \sec^2 \theta \times \cos^2 \theta = 1$

69. (3) $p^3 - q^3 = (p - q) [(p - q)^2 + xpq]$

$p^3 - q^3 = (p - q) [p^2 + q^2 + (x + 2)pq]$ (i)

But, $p^3 - q^3 = (p - q) (p^2 + q^2 + pq)$ (ii)

By comparing (i) & (ii)

$x - 2 = 1 \Rightarrow x = 3$

70. (3) $a + \frac{1}{a} = \sqrt{3}$

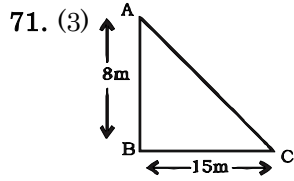
$a^3 + \frac{1}{a^3} = 0$

Now, $a^{18} + a^{12} + a^6 + 1$

$\Rightarrow a^{15} \left[a^3 + \frac{1}{a^3} \right] + a^3 \left[a^3 + \frac{1}{a^3} \right]$

Put $a^3 + \frac{1}{a^3} = 0 = a^{15} (0) + a^3 (0)$

$= 0 + 0 = 0$



$AC = \sqrt{AB^2 + BC^2}$

$= \sqrt{8^2 + 15^2}$

$= \sqrt{64 + 225} = 17m$

Height of tree = AB + AC = 8 + 17 = **25m**

72. (1) Required ratio

$= \frac{3.3+2.5+1.6+1.6+1.1}{3.3+2.5+1.6+1.6+1.6+1.1+22.6+12.5+12.1+10.6}$

$= \frac{11.7}{69.5} = \frac{1}{6}$

73. (4) UAE

74. (2) Required Ratio = 35.2 : 68.8

= **35 : 69**

75. (2) Required Answer = $\frac{10.6}{1.2} = 9$

76. (3) 'No sooner than' is the correct correlative.

77. (1) 'Consist' does not come in 'ing' form.

80. (3) 'had' will come before 'met'. When both the events are of past and 2nd depends on the 1st action, Past perfect is used for the 1st action and Past indefinite for the 2nd action.

81. (2) 'either' will come after 'to'. 'accept' and 'deny' are joined by 'either' and 'or'.

92. (2) We need a noun here. So signigance is appropriate.

93. (2) 'Responsible for' 'Responsibility of'