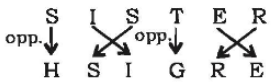
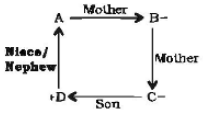
ANSWER SET - 25

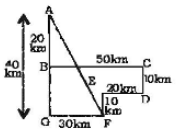
1. (4) 2. (3) 3. (2) 4. (4) 5. (1)
6. (4) 7. (4) 8. (3) 9. (3) 10. (3)
11. (1) 12. (4) 13. (3) 14. (2) 15. (2)
16. (4) 17. (2) 18. (3) 19. (1) 20. (3)
21. (4) 22. (3) 23. (3) 24. (3) 25. (4)
26. (3) 27. (2) 28. (3) 29. (1) 30. (1)
31. (2) 32. (2) 33. (3) 34. (2) 35. (2)
36. (3) 37. (1) 38. (4) 39. (1) 40. (2)
41. (1) 42. (1) 43. (3) 44. (2) 45. (1)
46. (2) 47. (4) 48. (1) 49. (2) 50. (3)
51. (4) 52. (2) 53. (1) 54. (2) 55. (1)
56. (4) 57. (4) 58. (2) 59. (4) 60. (2)
61. (1) 62. (3) 63. (2) 64. (3) 65. (4)
66. (4) 67. (1) 68. (2) 69. (3) 70. (1)
71. (1) 72. (4) 73. (4) 74. (3) 75. (1)
76. (1) 77. (1) 78. (3) 79. (3) 80. (2)
81. (4) 82. (1) 83. (3) 84. (3) 85. (2)
86. (4) 87. (3) 88. (2) 89. (2) 90. (4)
91. (1) 92. (1) 93. (4) 94. (1) 95. (4)
96. (2) 97. (1) 98. (3) 99. (4) 100.(3)

EXPLANATION - 25

1. (4) As, KILOGRAM has 8 letters and $8^3 = 512$.
   Similarly, KILOMETER has 9 letters and $9^3 = 729$
2. (3) As,
   

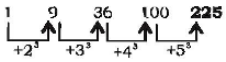
   Similarly,
   

3. (2) As, Histology deals with the study of Tissues. Similarly, Ecology deals with the study of **Environment**
4. (4) Except **UOFA**, the remaining have vowels only.
5. (1) Except **Ostrich**, the remaining can fly.
6. (4) Except **Subtraction**, the remaining are synonyms.
7. (4)
   

8. (3) $20 = 9 \times 5 - 5^2$
   $20 = 8 \times 7 - 6^2$
   $17 = 9 \times 9 - 8^2$
   $47 = 8 \times 9 - 5^2$
9. (3) $55 = 8 \times 9 - (9+8)$
   $29 = 6 \times 7 - (6 + 7)$
   $20 = 8 \times 4 - (8 + 4)$
10. (3) $72 = 9 \times 8$
    $45 = 5 \times 9$
    $30 = 6 \times 5$
    $48 = 8 \times 6$
11. (1) ATQ,
    

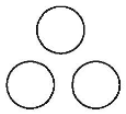
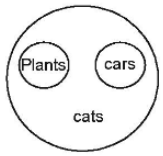
    AG = AB + CD + EF = 40 km
    GF = BC – ED = 50 – 20 = 30 km
    Points AGF form a right angle triangle
    So, AF = **50 km**
12. (4) From fig (i) and (iii)

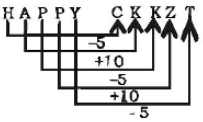
3	4	6
$\frac{3}{5}$	2	1

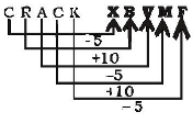
13. (3)
    

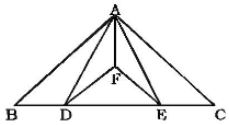
14. (2)

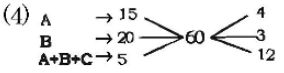
1	4	27	256	3125
↓	↓	↓	↓	↓
1^1	2^2	3^3	4^4	5^5

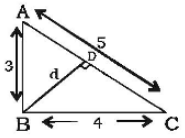
15. (2) x + x + 4 + ——+ x + 20 = 78
    $\Rightarrow$ 6x + 4 (1 + 2 + 3 + 4 + 5) = 78
    $\Rightarrow$ 6x = 78 – 60 = 18
    $\Rightarrow$ x = **3 years**
16. (4)
    
17. (2)
    

    I. **False**
    II. **False**
18. (3) Letter $\rightarrow$ Word $\rightarrow$ Sentence
    4 1 3
    $\rightarrow$ Paragraph
    2
19. (1) As,
    

    Similarly,
    

20. (3) ababcabcdabcde
21. (4) 25 ÷ 5 – 10 × 2 + 30 = 15
22. (3)
    

    ΔABC, ΔADB, ΔDEF, ΔADF, ΔAFE, ΔACE, ΔADE, ΔADC, ΔABE
23. (3)
24. (3) Obediance $\rightarrow$ Obedience $\rightarrow$ Obediencia $\rightarrow$ Obedient
25. (4)
51. (4)
    

    $\therefore$ Time taken by C $= \frac{60}{12-4-3}$
    = **12 days**
52. (2) ATQ,
    

    $BD = \frac{AB \times BC}{AC}$
    $\Rightarrow BD = \frac{3 \times 4}{5} =$ **2.4 cm**
53. (1) ATQ,
    Failed Boys $= \frac{28 \times 2000}{100} = 560$
    Failed Girls $= \frac{38 \times 1300}{100} = 494$
    Total failed candidates
    $= \frac{(560+494) \times 100}{3300} =$ **31.94%**
54. (2) ATQ,
    $\sqrt{3}\cot\theta = 3\cos\theta$
    $\Rightarrow \sin\theta = \frac{1}{\sqrt{3}}$
    $\Rightarrow \sin^4\theta = \frac{1}{9}$
    Again, $\sin\theta = \frac{1}{\sqrt{3}}$
    Apply Pythagoras Theorem,
    $\Rightarrow \cos\theta = \frac{\sqrt{2}}{\sqrt{3}}$
    $\Rightarrow \cos^4\theta = \frac{4}{9}$
    Then,
    $\sin^4\theta - \cos^4\theta = \frac{1}{9} - \frac{4}{9} = \frac{-1}{3}$
55. (1) ATQ,
    $\frac{\pi r^2 h}{2\pi r h} = \frac{12474}{1188}$
    $\Rightarrow$ r = 21 cm
    and, $2\pi r h = 1188$
    $\Rightarrow$ h = 9 cm
    Hence, h : r
    9 : 21
    3 : 7
56. (4) ATQ,

$x - y = \frac{15}{30} \times 60 = 30$ kmph——(i)

and,

$x + y = \frac{30}{30} \times 60 = 60$ kmph— (ii)

From equation (i) and (ii),
x = 45 kmph and y = 15 kmph

$\therefore$ Total time $= \frac{90}{45} =$ **2 hours**

58. (2) ATQ,

$a^4 + a^2b^2 + b^4 = a^4 + a^2b^2 + b^4 + a^2b^2 - a^2b^2$

$\Rightarrow 147 = a^4 + 2a^2b^2 + b^4 - a^2b^2$

$\Rightarrow 147 = (a^2 + b^2)^2 - a^2b^2$

$\Rightarrow 147 = (a^2 + b^2 - ab)(a^2 + b^2 + ab)$

Hence, $a^2 + b^2 + ab = \frac{147}{21} = 7$

59. (4) ATQ,

$121 = P\left(\frac{11}{100}\right)^2$

$\Rightarrow$ P = ₹ **10000**

60. (2) ATQ,

$\cos\theta + \sec\theta = 2$

$= \cos\theta + \frac{1}{\cos\theta} = 2$

$= \cos^2\theta + 1 - 2\cos\theta = 0$

So, $\sin 0° - \text{cosec}\, 0° =$ **0**

61. (1) Required difference = 20% of 800 – 14% of 600
= 160 – 84 = **76**

62. (3) Required Percentage

$= \frac{16\% \text{ of } 600}{10\% \text{of } 800} = \frac{96}{80} \times 100 =$ **120**

63. (2) Ratio at shop B

Mango	:	Apple	:	Orange
$\frac{40\times600\times25}{100}$	:	$\frac{60\times16\times600}{100}$	:	$\frac{25\times14\times600}{100}$
100	:	96	:	35

64. (3) Required average

$= \frac{64+67+71+73+79+83+89+97}{8}$

$= \frac{620}{8} = 77.5$

65. (4) ATQ,

$\sqrt{2100-731} = \sqrt{1369} = 37$

$\sqrt{525+499} = \sqrt{1024} = 32$

$\sqrt{756+688} = \sqrt{1444} = 38$

$\sqrt{2177-656} = \sqrt{1521} = 39$

66. (4) ATQ,

$x^3 - \frac{1}{x^3} = 140$

$\Rightarrow x - \frac{1}{x} = 5$ .....(i)

and,

$x^2 + \frac{1}{x^2} = 62$

$\Rightarrow x + \frac{1}{x} = 8$ .....(ii)

From equation (i) and (ii),

$x = \frac{13}{2}$ and $\frac{1}{x} = \frac{3}{2}$

then,

$x : \frac{1}{x}$

$\Rightarrow \frac{13}{2} : \frac{3}{2} =$ **13 : 3**

67. (1) Let cost price = x
ATQ,

$x \times \frac{115}{100} \times \frac{120}{100} \times \frac{350}{3\times100}$

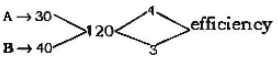
$\Rightarrow$ x = ₹ **50000**

68. (2) Let the numbers = 13x and 27x
ATQ,

$\frac{13x+27}{27x+13} = \frac{3}{5}$

$\Rightarrow$ x = 6
Hence, the numbers are **78** and **162**

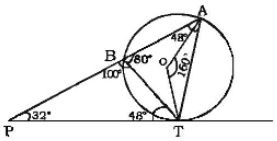
69. (3) ATQ,



Hence, Required number of days

$= \frac{120 - 12\times3}{7} =$ **12 days**

70. (1) ATQ,



$\angle PAT = \angle BTP = 48°$
(Alternate Segment Theorem)
Now, In ΔPTA
$\angle TPA = \angle TBA - \angle BTP = 80° - 48° =$ **32°**

71. (1) Required average speed

$= \frac{2\times25\times37}{25+37} = 29\frac{26}{31}$ kmph

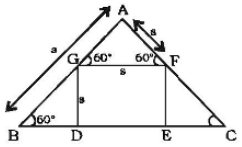
72. (4) Let rate (for annually) = 2r
then, rate (for half yearly) = r
ATQ,

$1000\left(1+\frac{r}{100}\right)^3 = 1331$

$\Rightarrow \left(1+\frac{r}{100}\right)^3 = \frac{1331}{1000} = \left(\frac{11}{10}\right)^3$

$\Rightarrow$ r = 10
Hence, the rate = 2 × 10 = **20%**

74. (3) ATQ,



In ΔBDG
BG = cosec 60° × GD

$BG = \frac{2}{\sqrt{3}}s$

and $\Delta AGF \approx \Delta ABC$
[$\because$ DE ||GF]
Now,

$\Rightarrow a = BG + GA = \frac{2}{\sqrt{3}}s + s$

$\Rightarrow a = \frac{2+\sqrt{3}}{\sqrt{3}}s$

$\Rightarrow \frac{s}{a} = \frac{\sqrt{3}}{2+\sqrt{3}}$

75. (1) $\tan\theta + \cot\theta = \frac{\sin^2\theta + \cos^2\theta}{\sin\theta\cos\theta}$

$= \text{cosec}\theta\sec\theta = \sqrt{1+\cot^2\theta}\sqrt{1+\tan^2\theta}$