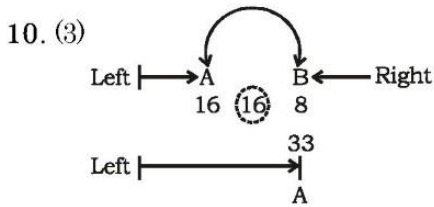


ANSWER SET - 03

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

EXPLANATION - 03

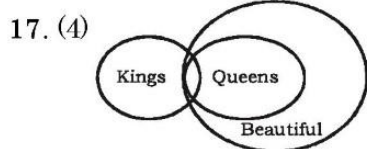
1. (4) $\begin{matrix} +2 & +1 & +2 & & +2 & +1 & +2 \\ \text{A} & \text{B} & \text{D} & \text{E} & \text{F} & \text{G} & \text{I} & \text{J} & \text{P} & \text{O} & \text{S} & \text{T} & \text{U} & \text{V} & \text{X} & \text{Y} \\ \text{E} & \text{F} & \text{G} & \text{H} & \text{I} & \text{J} & \text{K} & \text{L} & \text{M} & \text{N} & \text{O} & \text{P} & \text{Q} & \text{R} & \text{S} & \text{T} \end{matrix}$
3. (4) $\begin{matrix} 3 & 8 & 1 & : & 1 & 6 & 0 & :: & 4 & 7 & 8 & : & 2 & 5 & 7 \\ \downarrow & \downarrow & \downarrow & & \downarrow & \downarrow & \downarrow & & \downarrow & \downarrow & \downarrow & & \downarrow & \downarrow & \downarrow \\ -2 & -2 & -2 & & -2 & -2 & -2 & & -2 & -2 & -2 & & -2 & -2 & -2 \\ -1 & -1 & -1 & & -1 & -1 & -1 & & -1 & -1 & -1 & & -1 & -1 & -1 \end{matrix}$
4. (3) Note : There are three boys between C and B.
5. (2) $5 * 3 = (5 \times 3) + (5 - 3)^2 = 19$
 $8 * 5 = (8 \times 5) + (8 - 5)^2 = 49$
 Similarly,
 $6 * 4 = (6 \times 4) + (6 - 4)^2 = 28$
6. (4) (1) $8 - 11 = -3$
 (2) $1 - 4 = -3$
 (3) $7 - 10 = -3$
 (4) $3 - 5 = -2$
7. (4) Except the option (4), all the other options start with small letters and end with capital letters.
8. (3) Except the option (3), all the other options have parts interrelated to each other.
9. (2) $Q > U > P > S > R$



Total number of students = $16 + 8 = 24$

11. (4) $a \underline{d} c / a \underline{d} c / \underline{a} d c / \underline{a} d c / a d$
 \underline{c}
12. (3) $\begin{matrix} 2 & 3 & 8 & 27 & 112 & 565 \\ \text{[}(2 \times 1) + 1\text{]} & \text{[}(3 \times 2) + 2\text{]} & \text{[}(8 \times 3) + 3\text{]} & \text{[}(27 \times 4) + 4\text{]} & \text{[}(112 \times 5) + 5\text{]} & \text{[}(565 \times 6) + 6\text{]} \end{matrix}$
13. (3) $\begin{matrix} 14 & 27 & 52 & 101 & 198 & 391 \\ \text{[}(14 \times 2) - 1\text{]} & \text{[}(27 \times 2) - 2\text{]} & \text{[}(52 \times 2) - 3\text{]} & \text{[}(101 \times 2) - 4\text{]} & \text{[}(198 \times 2) - 5\text{]} & \text{[}(391 \times 2) - 6\text{]} \end{matrix}$
14. (3) $\begin{matrix} 1 & 3 & 5 & 7 & 9 \\ \text{L} & \text{J} & \text{H} & \text{F} & \text{D} \\ \text{Z} & \text{V} & \text{R} & \text{N} & \text{J} \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ +2 & +2 & +2 & +2 & +2 \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ -2 & -2 & -2 & -2 & -2 \end{matrix}$

15. (1) $\begin{matrix} \text{T H O U G H T} \rightarrow \text{T H G U O H T} \\ \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \\ 1 \ 2 \ 3 \ 4 \ 5 \ 6 \ 7 \ 7 \ 6 \ 5 \ 4 \ 3 \ 2 \ 1 \end{matrix}$
 Similarly,
 $\begin{matrix} \text{T H R O A T S} \rightarrow \text{S T A O R H T} \\ \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \\ 1 \ 2 \ 3 \ 4 \ 5 \ 6 \ 7 \ 7 \ 6 \ 5 \ 4 \ 3 \ 2 \ 1 \end{matrix}$
16. (3) REVISION

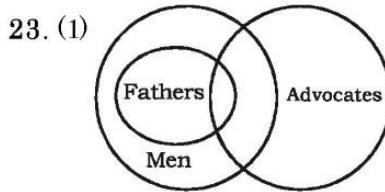
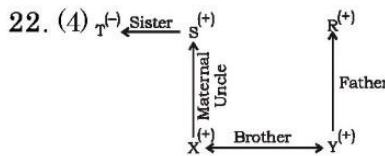


Conclusions = $I - \times$
 $= II - \times$

18. (2) $(11 + 1) \times (11 - 1) = 120$
 and $(7 + 2) \times (7 - 2) = 45$
 and, $(5 + 3) \times (5 - 2) = 16$
19. (2) $(72 \div 8) \times 13 = 117$ and
 $(189 \div 21) \times 7 = 63$
 Similarly,
 $(36 \div 4) \times 6 = 54$

20. (2) $U \xrightarrow{\text{Place Value}} 21 \downarrow$
 $21 \div 3 = 7 \xrightarrow{\text{Place Value}} G$
 $L \xrightarrow{\text{Place Value}} 12 \downarrow$
 $12 \div 3 = 4 \xrightarrow{\text{Place Value}} D$
 $I \xrightarrow{\text{Place Value}} 9 \downarrow$
 $9 \div 3 = 3 \xrightarrow{\text{Place Value}} C$

21. (2) $\frac{\text{Submerge}}{e} \quad \frac{\text{Synarchy}}{d}$
 $\frac{\text{Syncretism}}{c} \quad \frac{\text{Syphilis}}{b} \quad \frac{\text{Syringe}}{a}$



24. (4) $35 - 4 + 25 \div 5 \times 5 = 56$
 $35 - 4 + 5 \times 5 = 56$
 $35 - 4 + 25 = 56$
 $35 + 25 - 4 = 56$
 $60 - 4 = 56$
 $56 = 56$ (Correct)

25. (3) $G = 02, 10, 23, 31, 44$
 $I = 56, 65, 79, 88, 97$
 $R = 59, 68, 77, 86, 95$
 $L = 03, 11, 24, 32, 40$

27. (2) Total simple interest = 5420
 ATQ,

$$\frac{12000 \times 12 \times 1}{100 \times 2},$$

$$\frac{28000 \times 8 \times 1}{100} + \frac{40000 \times r \times 1}{100}$$

$$= 5420$$

$$780 + 2240 + 400r = 5420$$

$$400r = 2400$$

$$r = 6\%$$

29. (4) $x - y = \frac{x+y}{7}$
 $7x - 7y = x + y$
 $6x = 8y$
 $3x = 4y$
 $x - y = \frac{xy}{4}$
 $4x - 4y = xy$
 $4x - 3x = x \left(\frac{3}{4}x \right) \Rightarrow x = \frac{4}{3}$

$$xy = \left(\frac{4}{3} \right) \times \left(\frac{4}{3} \times \frac{3}{4} \right) > \frac{4}{3}$$

30. (3) $x = \frac{\sqrt{3}+1}{\sqrt{3}-1}$

$$x = \frac{\sqrt{3}+1}{\sqrt{3}-1} \times \frac{\sqrt{3}+1}{\sqrt{3}+1}$$

$$= \frac{3+1+2\sqrt{3}}{3-1}$$

$$= 2 + \sqrt{3}$$

$$x^2 = 4 + 3 + 4\sqrt{3} = 7 + 4\sqrt{3}$$

$$x^2 - 4x + 2 = 7 + 4\sqrt{3} - 8 - 4\sqrt{3} + 2 = 1$$

31. (1) $\frac{\cot 54^\circ}{\tan 36^\circ} + \frac{\tan 20^\circ}{\cot 70^\circ} - 2$

$$= \frac{\cos 54^\circ}{\cot 54^\circ} + \frac{\tan 20^\circ}{\tan 20^\circ} - 2$$

$$= 1 + 1 - 2 = 0$$

35. (3) Number of literate men = 4320
 ATQ,

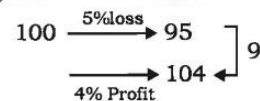
So, number of literate population

$$= 4320 \times \frac{100}{72} = 6000$$

So, the total population of village

$$= 6000 \times \frac{100}{40} = 15000$$

36. (4) C.P. S.P.



If the man sold the article at ₹ 9

more, then the cost price = ₹ 100
If the man sold the article at ₹ 1800 more,

$$\text{then the cost price} = ₹ \left(\frac{1800 \times 100}{9} \right)$$

$$= ₹ 20000$$

37. (1) Seats of Maths, Physics and Chemistry = 5 : 7 : 8

ATQ,

New ratio of seats of Maths, Physics and Chemistry

$$= 5 \times \frac{140}{100} : 7 \times \frac{150}{100} : 8 \times \frac{175}{100}$$

$$= 2 : 3 : 4$$

38. (3) A 10 → 6
B 12 → 60 → 5
C 15 → 4
15

Let total units of work = 60 units
In 5 days, A can work = $6 \times 5 = 30$ units

In 3 days, B can work = $5 \times 3 = 15$ units

So, total days to complete the work

$$= \frac{60 + 30 + 15}{15} = 7 \text{ days}$$

39. (3) Pump without leak 2 → 7
Pump without leakage $\frac{7}{3}$ → 14 → $\frac{6}{1}$

So, leakage will empty the tank

$$\text{in} = \frac{14}{1} = 14 \text{ hrs.}$$

40. (2) Let the speed of the faster train = S_1

Let the Speed of the slower train = S_2

ATQ,

$$S_1 + S_2 = \frac{130 + 110}{12} > \frac{240}{12}$$

$$\Rightarrow S_1 + S_2 = 20$$

$$S_1 - S_2 = \frac{130 - 110}{20} > \frac{240}{20}$$

$$\Rightarrow S_1 - S_2 = 12$$

So, speed of the faster train

$$= \frac{20 + 12}{2} > 16 \text{ m/sec}$$

42. (1) $\sin x + \sin y = a$

$$2 \sin \left(\frac{x+y}{2} \right) \cos \left(\frac{x-y}{2} \right) = a \dots (i)$$

$$\cos x + \cos y = b$$

$$2 \cos \left(\frac{x+y}{2} \right) \cos \left(\frac{x-y}{2} \right) = b \dots (ii)$$

By (i) and (ii)

$$\tan \left(\frac{x+y}{2} \right) = \frac{a}{b}$$

43. (4) ATQ,
Ratio of curved surface areas will be

$$= \pi r l_1 : \pi r l_2$$

$$= 5 : 4$$

45. (3) Ratio of M.P. of a shirt and trousers = 1 : 2

Let the marked price of a shirt = 100

Marked price of a trousers = 200

Total discount

$$= \frac{30}{100} \times (100 + 20) > 90$$

$$\text{Discount on shirt} = \frac{40}{100} \times 100$$

$$= 40$$

$$\text{Discount on trousers} = 90 - 40 = 50$$

So, discount percent on trousers

$$= \frac{50}{200} \times 100 = 25\%$$

46. (4) Base Area of the cone (πr^2)

$$= 770 \text{ cm}^2$$

So, radius of the cone

$$= \sqrt{770 \times \frac{7}{22}}$$

$$= 7\sqrt{5} \text{ cm}$$

Curved surface area of the cone

$$= (\pi r l) = 814 \text{ cm}^2$$

Slant height of the cone

$$= 814 \times \frac{7}{22} \times \frac{1}{7\sqrt{5}} = \frac{37}{\sqrt{5}} \text{ cm}$$

Height of the cone

$$= \sqrt{\left(\frac{37}{\sqrt{5}} \right)^2 - (7\sqrt{5})^2} = \frac{12}{\sqrt{5}}$$

So, volume of the cone =

$$= \frac{1}{3} \pi r^2 h$$

$$= \frac{1}{3} \times \frac{22}{7} \times 7\sqrt{5} \times 7\sqrt{5} \times \frac{12}{\sqrt{5}}$$

$$= 616\sqrt{5} \text{ cm}^3$$

47. (3) ATQ,
Time required to fill the tank by 7 cm

$$= \frac{50 \times 44 \times 7 \times 7 \times 100 \times 100}{100 \times 22 \times 7 \times 7 \times 5000}$$

$$= 2 \text{ hours}$$

49. (3) Total number of employees in

$$\text{scale V} = \frac{13}{100} \times 1700 = 221$$

Total number of male employees in

$$\text{Scale V} = \frac{12}{100} \times 900 = 108$$

So, Total number of female employees in

$$\text{Scale V} = 221 - 108 = 113$$

50. (2) Total number of employees in

$$\text{Scale VII} = \frac{6}{100} \times 1700 = 102$$

Total number of male employees in

$$\text{Scale VII} = \frac{10}{100} \times 900 = 90$$

$$\text{Required Ratio} = 90 : (102 - 90)$$

$$= 90 : 12$$

$$= 15 : 2$$