

∴ Difference of two numbers

$$= \frac{(5-3)}{(5+3)} \times 2400 = 600$$

60. (A) Here, $\angle PSQ = 180^\circ - (110^\circ + 30^\circ)$
 $\Rightarrow \angle PSQ = 40^\circ$
 and, $\angle QSR = 75^\circ - 40^\circ = 35^\circ$
 Now, $\angle QSR + \angle SRT = 180^\circ$
 $[\because SQ \parallel RT]$
 $\Rightarrow 35^\circ + 60^\circ + x = 180^\circ$
 $\Rightarrow x = 180^\circ - 95^\circ$
 $\Rightarrow x = 85^\circ$
61. (B) ATQ,
 Product of length and breadth of wall paper
 = perimeter of room
 $\Rightarrow \text{Length} \times 2 = 2(\text{Length} + \text{Breadth}) \times \text{height}$
 $\Rightarrow \text{Length} = \frac{2 \times 4(8.3 + 4.2)}{2} = 50 \text{ m}$
62. (A) [It is to be noted that in cricket score of not out innings is not counted in total innings while its score is calculated in total score]
 Now, total score of five innings
 = $68 + 72 + 3 + 42 + 26 = 211$
 But he has remained not out in one innings, therefore total innings counted = 4
 \therefore Required average = $\frac{211}{4} = 52.75$
63. (B) Given,
 $\Rightarrow P \left(1 + \frac{r}{100}\right)^4 = 3760$
 $\Rightarrow P \left(1 + \frac{r}{100}\right)^5 = 3854$
 ATQ,
 $\Rightarrow \frac{P \left(1 + \frac{r}{100}\right)^5}{P \left(1 + \frac{r}{100}\right)^4} = \frac{3854}{3760}$
 $\Rightarrow 1 + \frac{r}{100} = \frac{3854}{3760}$
 $\Rightarrow \frac{r}{100} = \frac{3854}{3760} - 1 = \frac{94}{3760}$
 $\Rightarrow r = \frac{94}{3760} \times 100 = 2.5\%$
64. (A) Per quintal cost of two different sorts of rice = $\frac{4642.50}{60} = 77.375$ per quintal

Now,

$$\begin{array}{ccc} 80 & & 75.50 \\ & \diagdown & / \\ & 77.375 & \\ & / & \diagdown \\ 1.875 & : & 2.625 \\ 5 & : & 7 \end{array}$$

- The quantity of better sort = $\frac{60}{12} \times 5 = 25$ quintals and the quantity of worse sort = $\frac{60}{12} \times 7 = 35$ quintals
65. (A) ATQ,
 SI at the rate of 4% for 2 year
 $\frac{P \times 4 \times 2}{100} = \frac{8P}{100} \dots\dots\dots(i)$
 SI at the rate of 6% for next 4 year
 $= \frac{P \times 6 \times 4}{100} = \frac{24P}{100} \dots\dots\dots(ii)$
 For next 3 year
 $SI = \frac{P \times 8 \times 3}{100} = \frac{24P}{100} \dots\dots\dots(iii)$
 Total SI = $\frac{8P}{100} + \frac{24P}{100} + \frac{24P}{100} = ₹1120$
 $\Rightarrow P = \frac{1120 \times 100}{56} = ₹2000$
66. (C) ATQ,
 $(5x \times 5) + (7x \times 2) + (9x \times 1) = 576$
 $\Rightarrow 48x = 576$
 $\Rightarrow x = 12$
 \therefore Value of ₹2 coin = $14 \times 12 = 168$
 \therefore Number of ₹2 coin = $\frac{120}{2} = 84$
67. (D) Let required number of wickets = x
 ATQ,
 $13.2 \times x + 24 = (x + 5)(13.2 - 0.4)$
 $\Rightarrow 13.2x + 24 = 12.5x + 64$
 $\Rightarrow 0.4x = 40$
 $\Rightarrow x = 100$
68. (D) Given equations are:
 $3x + 4y = 5 \dots\dots\dots(i)$
 $x + 2y = 2 \dots\dots\dots(ii)$
 On solving of (i) and (ii)
 We find $x = 1, y = \frac{1}{2}$
 $\therefore x + y = 1 + \frac{1}{2} = \frac{3}{2}$

69. (A) ATQ,
Distance covered by first train in 2 hours
= $40 \times 2 = 80$ km

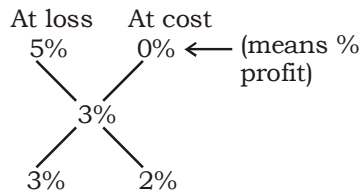
$$\therefore \text{Required time} = \frac{140 - 80}{40 + 50}$$

$$= \frac{60}{90} = 40 \text{ min}$$

\therefore They will meet at 10.40 am

70. (B) ATQ,
 $10W \times 7D = 10C \times 14D$
 $\Rightarrow 1W = 2C$
 $\therefore 5W + 10C = 20C$
 $\therefore 10C$ takes 14 days to complete the work
Hence, $20C$ take 7 days

71. (C) ATQ,



Ratio of quantity of tea sold at loss and cost price = 3 : 2

$$\therefore \text{Quantity sold at cost price} = \frac{2}{5} \times 40 = 16 \text{ kg}$$

72. (A) $\theta = 25^\circ = \frac{25 \times \theta}{180}$ radian

$$= \frac{5\theta}{36} \text{ radian and, } \theta = \frac{s}{r}$$

$$\Rightarrow r = \frac{40}{\frac{5\theta}{36}} = \frac{40 \times 36}{5\theta} = \frac{40 \times 36 \times 7}{5 \times 22} \text{ m}$$

$$= 91.64 \text{ m}$$

73. (D) In $\triangle ABC$ and $\triangle AED$,
 $\angle BAC = \angle DAE$
 $= 180^\circ - (75^\circ + 65^\circ) = 40^\circ$
 $\angle AED = 75^\circ = \angle ABC$
 $\therefore \triangle AED \sim \triangle ABC$

$$\therefore \frac{DE}{BC} = \frac{AE}{AB} = \frac{AD}{AC} \Rightarrow \frac{2}{3} = \frac{12}{AB}$$

$$\Rightarrow AB = 18 \text{ cm}$$

74. (D) Let Monika got $x\%$ of the remaining 40 questions

ATQ,

$$\frac{x}{100} \times 40 + \frac{65}{100} \times 40 = \frac{75}{100} \times 80$$

$$\Rightarrow \frac{40x + 2600}{100} = \frac{6000}{100}$$

$$\Rightarrow 40x + 2600 = 6000$$

$$\Rightarrow 40x = 3400$$

$$\therefore x = \frac{3400}{40} = 85\%$$

75. (C) Given

$$a = 7 + 4\sqrt{3}$$

$$\frac{1}{a} = \frac{1}{7 + 4\sqrt{3}} = \frac{1}{7 + 4\sqrt{3}} \times \frac{7 - 4\sqrt{3}}{7 - 4\sqrt{3}}$$

$$= 7 - 4\sqrt{3}$$

$$a + \frac{1}{a} = 7 + 4\sqrt{3} + 7 - 4\sqrt{3} = 14$$

$$\frac{a^6 + a^4 + a^2 + 1}{a^3} = \frac{a^6}{a^3} + \frac{a^4}{a^3} + \frac{a^2}{a^3} + \frac{1}{a^3}$$

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

$$= \left(a + \frac{1}{a}\right)^3 - 3\left(a + \frac{1}{a}\right) + \left(a + \frac{1}{a}\right)$$

$$= (14)^3 - 2 \times 14 = 2772$$

76. (A) Let the number of grapes eaten on the first day be x .

$$\therefore x + x + 6 + x + 12 + x + 18 + x + 24 = 100$$

$$\Rightarrow 5x + 60 = 100$$

$$\Rightarrow 5x = 100 - 60 = 40$$

$$\Rightarrow x = \frac{40}{5} = 8$$

77. (B) Let the sum invested at 9% be ₹ x and that invested at 11% be ₹ $(100000 - x)$
Then,

$$\left(\frac{x \times 9 \times 1}{100}\right) + \left[\frac{(100000 - x) \times 11 \times 1}{100}\right]$$

$$= \left(100000 \times \frac{39}{4} \times \frac{1}{100}\right)$$

$$\Rightarrow \frac{9x + 1100000 - 11x}{100} = \frac{39000}{4} = 9750$$

$$\Rightarrow 2x = (1100000 - 975000) = 125000$$

$$\Rightarrow x = 62500$$

$$\therefore \text{Sum invested at 9\%} = ₹62,500$$

$$\text{Sum invested at 11\%} = (100000 - 62500)$$

$$= ₹37,500$$

78. (C) $\frac{\frac{13}{4} - \frac{5}{6} \times \frac{4}{5}}{\frac{13}{3} \div \frac{1}{5} - \left(\frac{3}{10} + \frac{106}{5}\right)} - \left(\frac{3}{2} \times \frac{5}{3}\right)$

$$= \frac{\frac{13}{4} - \frac{2}{3}}{\frac{13 \times 5}{3} - \left(\frac{3+212}{10}\right)} - \frac{5}{2} = \frac{\frac{39-8}{12}}{\frac{65}{3} - \frac{215}{10}} - \frac{5}{2}$$

$$= \frac{\frac{31}{12}}{\frac{650-645}{30}} - \frac{5}{2} = \frac{31}{12} \times \frac{30}{5} - \frac{5}{2}$$

$$= \frac{31}{2} - \frac{5}{2} = \frac{31-5}{2} = \frac{26}{2} = 13$$

79. (C) ATQ,
 $12C \times 16 = 8A \times 12$

$$\Rightarrow \frac{C}{A} = \frac{1}{2}$$

\therefore Total work = $12 \times 1 \times 16 = 196$ unit
Work done by 16 adults in 3 days = $16 \times 2 \times 3 = 96$ units

$$\therefore \text{Required number of days} = \frac{192-96}{6 \times 2 + 4 \times 1} = 6$$

80. (A) Let the ratio be $x : (x + 40)$

$$\text{Then, } \frac{x}{(x+40)} = \frac{2}{7}$$

$$\Rightarrow 7x = 2x + 80$$

$$\Rightarrow x = 16$$

$$\Rightarrow \text{Required ratio} = 16 : 56$$

81. (B) Let x is the number of individuals who were covered. Then,

Percentage of uncertain individuals

$$= [100 - (20 + 60)]\% = 20\%$$

$$\therefore 60\% \text{ of } x - 20\% \text{ of } x = 720$$

$$\Rightarrow 40\% \text{ of } x = 720$$

$$\Rightarrow \frac{40}{100} x = 720 \Rightarrow x = \left(\frac{720 \times 100}{40}\right) = 1800$$

82. (A) $\angle COB = 360^\circ - (110^\circ + 90^\circ) = 160^\circ$

$$\Rightarrow x = \angle CAB = \frac{1}{2} \angle COB = \frac{1}{2} \times 160^\circ = 80^\circ$$

83. (C) Percentage of students failed in 1984

$$= \frac{35}{200} \times 100 = 17\frac{1}{2}\%$$

84. (C) Total passed students,
 $= 140 + 150 + 165 = 455$

$$\text{Total students} = 170 + 195 + 200 = 565$$

$$\therefore \text{Required percentage} = \frac{455}{565} \times 100$$

$$= \frac{9100}{113} = 80\frac{60}{113}\%$$

85. (D) Required percentage = $\frac{140}{170} \times 100$

$$= \frac{1400}{17} = 82\frac{6}{17}\%$$

86. (A) Information about Mughals is present in History and Information about Rivers is present in **Geography**.

87. (D) As, $7 \times 8 = 56$
 $8 \times 9 = 72$
Similarly, $9 \times 10 = 90$
 $10 \times 11 = 110$

88. (B) As, $\begin{matrix} M & U & M & B & A & I \\ & \swarrow & \searrow & \swarrow & \searrow & \swarrow \\ U & M & B & M & I & A \end{matrix}$

Similarly,

$$\begin{matrix} G & U & R & U & G & R & A & M \\ & \swarrow & \searrow & \swarrow & \searrow & \swarrow & \searrow & \swarrow \\ U & G & U & R & R & G & M & A \end{matrix}$$

89. (B) As, $\begin{matrix} O & P & Q & M & O & O \\ & \swarrow & \searrow & \swarrow & \searrow & \swarrow \\ & & & -2 & & \\ & & & +1 & & \\ & & & -2 & & \end{matrix}$

Similarly, $\begin{matrix} V & W & X & T & X & V \\ & \swarrow & \searrow & \swarrow & \searrow & \swarrow \\ & & & -2 & & \\ & & & +1 & & \\ & & & -2 & & \end{matrix}$

90. (A) $8 : 9 :: 25 : 32$
 $2^3 : 3^2 :: 5^2 : 2^5$

91. (D) Except **clash**, others are synonym of one-another.

92. (D) Except **Bhilai**, others are the nuclear power station.

93. (D) $\begin{matrix} C & E & H & J \\ & \swarrow & \searrow & \swarrow \\ & +2 & +3 & +2 \end{matrix}$ $\begin{matrix} H & J & M & O \\ & \swarrow & \searrow & \swarrow \\ & +2 & +3 & +2 \end{matrix}$
 $\begin{matrix} R & T & W & Y \\ & \swarrow & \searrow & \swarrow \\ & +2 & +3 & +2 \end{matrix}$ $\begin{matrix} P & Q & T & V \\ & \swarrow & \searrow & \swarrow \\ & +1 & +3 & +2 \end{matrix}$

94. (D) $583 \Rightarrow 8 - 5 = 3$

$$275 \Rightarrow 7 - 2 = 5$$

$$286 \Rightarrow 8 - 2 = 6$$

$$427 \Rightarrow 2 - 4 \neq 7$$

95. (C) Except **83**, other are composite number.

96. (D) As, $13 \Rightarrow 13^2 = 169$ and $31^2 = 961$

and, $15 \Rightarrow 15^2 = 225$ and $51^2 = 2601$

Similarly, $12 \Rightarrow 12^2 = 144$ and $21^2 = 441$

97. (C) As, $7^3 - 7 = 336$

and, $11^2 - 11 = 110$

Similarly, $8^3 - 8 = 504$

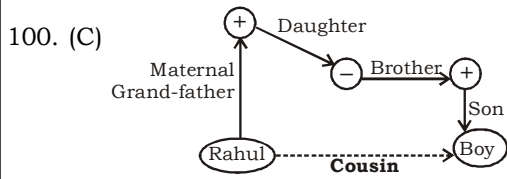
98. (B)

99. (C) The date which will be a holiday = 1, 7, 8, 14, 15, 21, 22, 28, 29

\therefore Required number of days = **9**

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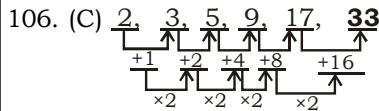
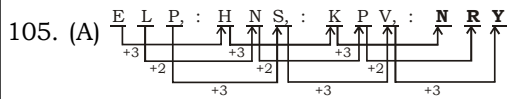


101. (D)

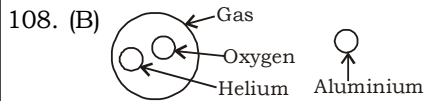
102. (B)

103. (B)

104. (A) Padma Shri → Padma Bhushan → Padma Vibhushan → **Bharat Ratna**



107. (A) Last day must be **Sunday**.



109. (B) **AB / AABB / AA ABBB**

110. (D) Neither I nor II follows.

111. (D) As,

$$\begin{array}{cccccc} D & I & G & I & T \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ @ & \# & \wedge & \# & * \end{array}$$

and,
$$\begin{array}{ccc} E & A & R \\ \downarrow & \downarrow & \downarrow \\ ? & ! & < \end{array}$$

Similarly,
$$\begin{array}{ccccc} T & I & G & E & R \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ * & \# & \wedge & ? & < \end{array}$$

112. (C) ATQ,

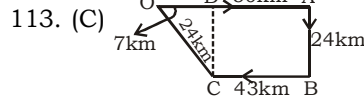
$$3E + 5P = 105 \dots (i)$$

$$4E + 6P = 130 \dots (ii)$$

On solving equation (i) and (ii), we get

$$E = 10 \text{ and } P = 15$$

∴ Price of one eraser = **₹10**



$$OC = \sqrt{24^2 + 7^2} = 25 \text{ km}$$

∴ Minimum distance between the movie hall and his office = **25 km**

114. (C)

115. (A)

116. (C) 411 B 3 A 29 C 53 D 20

After changing the signs as per the given details,

$$\begin{aligned} & 411 \div 3 - 29 + 53 \times 20 \\ & = 137 - 29 + 1060 \\ & = \mathbf{1168} \end{aligned}$$

117. (D)

118. (C)

119. (A) Number of squares is **14**

120. (C)

Answer key

1. (A)	16. (B)	31. (B)	46. (A)	61. (B)	76. (A)	91. (D)	106. (C)
2. (D)	17. (B)	32. (B)	47. (B)	62. (A)	77. (B)	92. (D)	107. (A)
3. (A)	18. (D)	33. (D)	48. (B)	63. (B)	78. (C)	93. (D)	108. (B)
4. (C)	19. (B)	34. (C)	49. (C)	64. (A)	79. (C)	94. (D)	109. (B)
5. (A)	20. (A)	35. (B)	50. (B)	65. (A)	80. (A)	95. (C)	110. (D)
6. (B)	21. (D)	36. (A)	51. (A)	66. (C)	81. (B)	96. (D)	111. (D)
7. (C)	22. (B)	37. (A)	52. (C)	67. (D)	82. (A)	97. (C)	112. (C)
8. (A)	23. (B)	38. (B)	53. (D)	68. (D)	83. (C)	98. (B)	113. (C)
9. (D)	24. (C)	39. (B)	54. (C)	69. (A)	84. (C)	99. (C)	114. (C)
10. (B)	25. (D)	40. (A)	55. (D)	70. (B)	85. (D)	100. (C)	115. (A)
11. (B)	26. (D)	41. (A)	56. (A)	71. (C)	86. (A)	101. (D)	116. (C)
12. (D)	27. (C)	42. (A)	57. (D)	72. (A)	87. (D)	102. (B)	117. (D)
13. (C)	28. (A)	43. (C)	58. (A)	73. (D)	88. (B)	103. (B)	118. (C)
14. (D)	29. (B)	44. (C)	59. (D)	74. (D)	89. (B)	104. (A)	119. (A)
15. (C)	30. (B)	45. (B)	60. (A)	75. (C)	90. (A)	105. (A)	120. (C)