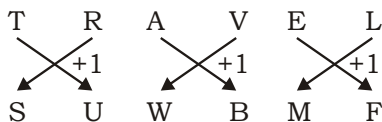


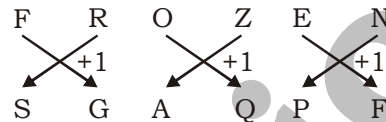
23 AUGUST (12 PM) (SOLUTION)

1. (1) $Z \xrightarrow{-2} X \xrightarrow{-2} V \xrightarrow{-2} T \xrightarrow{-2} R \xrightarrow{-2} P$
 $V \xrightarrow{-4} R \xrightarrow{-4} N \xrightarrow{-4} J \xrightarrow{-4} F \xrightarrow{-4} B$
 $G \xrightarrow{+2} I \xrightarrow{+2} K \xrightarrow{+2} M \xrightarrow{+2} O \xrightarrow{+2} Q$

2. (3) As,

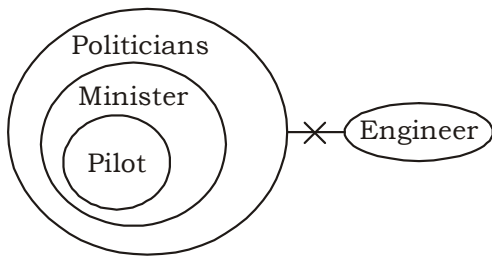


Similarly,



3. (2) Except (2), other are related to each other.
4. (2) LOAD in alphabetical order ADLO (1 4 12 15)
 Opposite + 1 (sum 28) $\Rightarrow$ 27 24 16 13
 CLEAN in alphabetical order XOVM (24 15 22 26 14)
 Opposite + 1 (sum 28) $\Rightarrow$ 27 25 23 16 14
 STRIKE in alphabetical order EIKRST (5 9 11 18 19 20)
 Opposite + 1 (sum 28) $\Rightarrow$ 23 19 17 10 9 8
5. (1)
6. (3) Total age of 17 person = $17 \times 33 = 663$ years
 Total age of first 9 person = $9 \times 35 = 315$ years
 Total age of last 9 person = $9 \times = 396$ years.
 $\therefore$ The age of 9th person = $(315 + 396) - 663 = 48$ years
7. (1) 3. Singular $\rightarrow$ 1. Sinuous $\rightarrow$ 2. Solemnity $\rightarrow$ 4. Solvable $\rightarrow$ 5. Sorting
8. (2) 9. (4)
10. (3) $4^3 + 10^3 = 1064 \Rightarrow \frac{1064}{2} = 532$
 $4^3 + 6^3 = 280 \Rightarrow \frac{280}{2} = 140$
11. (2) Mother $\leftrightarrow$ (Husband) $\Rightarrow$ Mother
 $\uparrow$ $\uparrow$
 Arya Meena = Kavita = Vansh⁺
 Hence, Varun is the uncle of Vansh.
12. (4) (1) $\frac{180}{6} = 30$ (even) (2) $\frac{294}{7} = 42$ (even)
 (3) $\frac{100}{5} = 20$ (even) (4) $\frac{52}{4} = 13$ (odd)
13. (1)
14. (1) As, $3^3 + 6^2 = 63$
 Similarly, $4^3 + 5^2 = 89$
15. (3) Groups of Lions are called pride where as groups of Bats are called colony.
16. (3) 350 is divisible by 5.
 990 is divisible by 9.
 19550 is divisible by 13.
17. (3) $Y \xrightarrow{-6} S \xrightarrow{-5} N \xrightarrow{-4} J \xrightarrow{-3} G$
18. (1) Ustad Zakir Hussain is an Indian 'tabla virtuoso' who played tabla and Hariprasad Chaurasiya is flutist, who plays the flute.
19. (3)

20. (4)



All the conclusion follows.

21. (1) $28 \xrightarrow{-10} 18 \xrightarrow{-6} 12 \xrightarrow{-4} 8 \xrightarrow{-3} 5$

22. (3) $252 * 14 * 8 * 100 * 16 * 60$
 From option (3),
 $252 \div 14 \times 8 - 100 + 16 = 60$
 $18 \times 8 - 100 + 16 = 60$
 $144 - 100 + 16 = 60$
 $60 = 60$

23. (2)

24. (2) (1) $H \xrightarrow{+2} J, Q \xrightarrow{-5} 12$ (2) $W \xrightarrow{+2} Y, B \xrightarrow{-3} Y$

(3) $L \xrightarrow{+2} N, M \xrightarrow{-5} H$ (4) $R \xrightarrow{+2} T, G \xrightarrow{-5} B$

25. (2)

26. (1) The time along the Standard Meridian of India ($82^{\circ}30'E$) passing through Mirzapur (in Uttar Pradesh) is taken as the standard time for the whole country. The latitudinal extent influences the duration of day and night, as one moves from south to north.

27. (1) Gora is a novel by Rabindranath Tagore, set in Calcutta (now Kolkata), in the 1880s during the British Raj. It is the fifth in order of writing and the longest of Tagore's twelve novels.

28. (2) The longest-serving female chief minister was Sheila Dikshit, who served as the chief minister of the National Capital Territory of Delhi from Indian National Congress held the office for over fifteen years.

29. (1) The Battles of Tarain, also known as the Battles of Taraori, were series of two battles fought in 1191 and 1192 A.D between Prithviraj Chauhan III of Ajmer and Ghurid ruler Mu'izz al-Din Muhammad or Mohd. Ghori. The battles were fought near the town of Tarain (Taraori), near Thanesar in present-day Haryana.

31. (1) Minhaj Siraj al-Din Juzjani is probably best known as the author of the Tabaqat-i Nasiri, a universal Islamic history (tarikh) in Persian.

32. (2) The inscriptions found in the central and eastern part of India were written in Magadhi Prakrit using the Brahmi script, while Prakrit using the Kharoshthi script, Greek and Aramaic were used in the northwest. These edicts were deciphered by British archaeologist and historian James Prinsep.

33. (1) Andal also known as Godadevi, Nachiyar and Kothai, is the only female Alvar among the 12 Alvar saints of South India. She is human incarnation of Goddess Bhudevi. The Alvar saints are known for their affiliation to the Srivaishnava tradition of Hinduism.

35. (3) The English Teacher is a 1945 novel written by R. K. Narayan. It is a part of a series of novels and collections of short stories set in "Malgudi". The English Teacher was preceded by Swami and Friends (1935), The Bachelor of Arts (1937) and Malgudi Days, (1943) and followed by Mr. R. K. Narayan.

37. (4) The Government of India has launched the 'Transformation of Aspirational Districts' initiative in January, 2018 with a vision of a New India by 2022 where the focus is to improve India's ranking under Human Development Index, raising living standards of its citizens and ensuring inclusive growth of all.

39. (4) Madhya Pradesh has taken the lead in undertaking power sector reforms stipulated by the Department of Expenditure, Ministry of Finance. As part of the reforms, the State has started Direct Benefit Transfer (DBT) of electricity subsidy to farmers in one district of the state with effect from December, 2020.
43. (2) The first Hockey Association was formed in the UK in 1876 and drew up the first formal set of rules. The original association survived for just six years but, in 1886, it was revived by nine founding member clubs.
45. (4) Anai Peak, Hindi Anai Mudi, peak in eastern Kerala state, southwestern India. Located in the Western Ghats range, it rises to 8,842 feet (2,695 metres) and is peninsular India's highest peak.
46. (2) In 1236 Sultan Iltutmish's daughter, Raziyya, became Sultan. The chronicler of the age, Minhaj-i Siraj, recognised that she was more able and qualified than all her brothers.
47. (2) The International Cotton Advisory Committee (ICAC), a global cotton research and advisory body, recently promoted Keshav R Kranthi, former director of Central Institute for Cotton Research (CICR) in Nagpur, as its chief scientist.
49. (2) The elements are arranged in seven horizontal rows, called periods or series, and 18 vertical columns, called groups.
51. (3) Let CP of washing machine be ₹ x.
CP of Fridge = ₹ (57300 - x)
ATQ,
- $$(57300 - x) \times \frac{115}{100} = x + \frac{76}{100}$$
- $$65895 - \frac{115x}{100} = \frac{76x}{100}$$
- $$x = \frac{65893 \times 100}{191} = ₹ 34500$$
52. (2) Perimeter = $2\pi r = 2 \times \frac{22}{7} \times 7 = 44$ cm
- Side of square = $\frac{44}{4} = 11$ cm
- Ratio = $\frac{22}{7} \times 7 \times 7 : 11 \times 11 = 14 : 11$
53. (2) Expenditure of education = $14400 \times \frac{60}{360} = ₹ 24000$
54. (3) $(x + 6)^3 + (2x + 3)^3 + (3x + 5)^3 - 3(x + 6)(2x + 3)(3x + 5) = 0$
 $(x + 6 + 2x + 3 + 3x + 5) = 0$
 $6x + 14 = 0$
 $x = -\frac{14}{6} = -\frac{7}{3}$
55. (2) $423 \div \left[270 \div \frac{3}{7} \times 35 + \left(17 \div \frac{1}{3} \right) - \left(8\frac{1}{2} - \frac{5}{2} \right) \right]$
 $= 423 \div \left[270 \times \frac{7}{3} \times 35 + (17 \times 3) - \left(\frac{17}{2} - \frac{5}{2} \right) \right]$
 $= 423 \div [90 \times 7 \times 35 + 51 - 6] = 423 \div [2295]$
 $= \frac{423}{2295} = \frac{47}{2455}$

56. (1) $x^4 + x^2y^2 + y^4 = 21$ and $x^2 + xy + y^2 = 3$ (i)

$$x^4 + x^2y^2 + y^4 = 21 = (x^2 + xy + y^2)(x^2 - xy + y^2)$$

$$21 = (x^2 - xy + y^2) \times 3$$

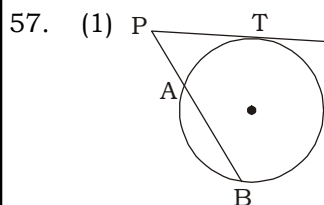
$$(x^2 - xy + y^2) = 7 \quad \text{.....(ii)}$$

Equation (ii) – equation (i),

$$x^2 - xy + y^2 - x^2 - xy - y^2 = 7 - 3$$

$$-2xy = 4$$

$$-xy = 2$$



$$PT^2 = PA \times PB$$

$$8^2 = 5 \times (5 + x)$$

$$64 = 25 + 5x$$

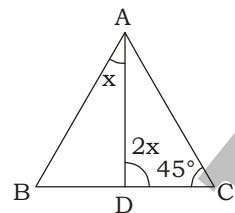
$$x = \frac{39}{5} = 7.8 \text{ cm}$$

58. (1) $(\operatorname{cosec} A - \cot A)(1 + \cos A)$

$$= \left(\frac{1}{\sin A} - \frac{\cos A}{\sin A} \right) (1 + \cos A)$$

$$= \frac{1 - \cos^2 A}{\sin A} = \frac{\sin^2 A}{\sin A} = \sin A$$

59. (2)



$$\angle ABC = 180^\circ - 77^\circ - 45^\circ = 58^\circ$$

$$\angle ADC = \angle ABD + \angle BAD$$

$$2x = 58^\circ + x$$

$$x = 58^\circ$$

$$\therefore \angle ADB = 180^\circ - 58^\circ - 58^\circ = 64^\circ$$

60. (3)

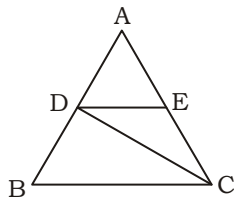


$$\pi(R^2 - r^2) = 3080$$

$$\frac{22}{7}(R + r)(R - r) = 3080$$

$$(R + r) = \frac{3080}{22 \times 10} \times 7 = 98 \text{ cm}$$

61. (4)



Area of $\triangle CED = 8 \text{ cm}^2$

Ratio of area of $\triangle CED$: ar. of $\square ADEC = 1 : 3$ (By mid-point theorem)

$\therefore$ Area of $ADEC = 8 \times 3 = 24 \text{ cm}^2$

62. (3) CP = ₹ 250

$$SP = 250 \times \frac{120}{100} = ₹ 300$$

$$MP = \frac{300}{64} \times 100 = ₹ 468.75$$

63. (3) Let the average we get be x kg.

$$40 \times 45.5 - 97.5 + 2x = 40 \times 44.2 - 2x + 97.5$$

$$1820 - 97.5 + 2x = 1768 - 2x + 97.5$$

$$4x = 143$$

$$x = \frac{143}{4} = 35.75 \text{ kg}$$

64. (1) $\frac{\sin^2 \theta}{\tan^2 \theta - \sin^2 \theta} = 5$

$$\sin^2 \theta = 5 \tan^2 \theta - 5 \sin^2 \theta$$

$$6 \sin^2 \theta = 5 \tan^2 \theta$$

$$\frac{6}{5} = \frac{\sin^2 \theta}{\cos^2 \theta \cdot \sin^2 \theta}$$

$$\frac{6}{5} = \frac{1}{\cos^2 \theta}$$

$$\cos^2 \theta = \frac{5}{6}$$

$$\sin^2 \theta = \frac{1}{6}$$

$$\sec^2 \theta = \frac{6}{5}$$

$$\cot^2 \theta = \frac{5}{6} \times \frac{60}{10} = 5$$

$$\operatorname{cosec}^2 \theta = 6$$

$$\therefore \frac{24 \sin^2 \theta - 15 \sec^2 \theta}{6 \cos^2 \theta - 7 \cot^2 \theta} = \frac{24 \times \frac{11}{60} - 15 \times \frac{6}{5}}{6 \times \frac{5}{6} - 7 \times 5} = \frac{4 \times 18}{36 - 35} = -14$$

65. (3) $A = P \left(1 + \frac{R}{100}\right)^2$

$$7938 = 7800 \left(1 + \frac{R}{100}\right)^2$$

$$\frac{7938}{7800} = \left(1 + \frac{R}{100}\right)^2$$

$$\frac{R}{100} = \frac{1}{10}$$

$$R = 10\%$$

66. (2) Number of boys in section A, B and D together

$$= 800 \times \frac{200}{100} - 102 + 800 \times \frac{18}{100} - 80 + 800 \times \frac{17}{100} - 98$$

$$= 58 + 64 + 38 = 160$$

$$\text{Number of girls in section B, C and D together} = 80 + 104 + 98 = 282$$

$$\therefore \text{Required}\% = \left(\frac{282 - 160}{160} \times 100\right)\% = 76.25\%$$

67. (3) $\frac{24 - x}{40 - x} = \frac{33 - x}{57 - x}$

$$1368 - 24x - 57x + x^2 = 1320 - 40x - 33x + x^2$$

$$1368 - 1320 = 81x - 73x$$

$$8x = 48$$

$$x = 6$$

$$\therefore \text{Required ratio} = (5 \times 6 + 12) : (4 \times 6 + 15) = 42 : 39 = 14 : 13$$

68. (4) $(10 - 7)\% = 900$

$$3\% = 900$$

$$100\% = ₹ 30000$$

$$\text{Total donation of A and B} = 30000 \times \frac{10}{100} + 30000 \times \frac{7}{100} = 3000 + 2100 = ₹ 5100$$

$$\text{Donation of C} = 5100 - 600 = ₹ 4500$$

$$\therefore \text{Salary of C} = \frac{4500}{9} \times 100 = ₹ 50000$$

69. (1) $\text{Speed} = \frac{144}{1.8} = 80 \text{ km/hr}$

$$\text{Required time} = \frac{144 \times 2}{80 \times \frac{120}{100}} = \frac{144 \times 2}{96} = 3 \text{ hours}$$

70. (3) Ratio of efficiency of A and B = 7 : 5

Ratio of time of A and B = 5 : 7

Let total work = 35

$$(A + B)\text{'s 1 day work} = \left(\frac{35}{5} + \frac{35}{7}\right) = 12$$

$$\text{ATQ, } A \frac{35}{12} \rightarrow \frac{35}{2}$$

$$B \rightarrow \frac{35}{2} \times \frac{12}{35} \times 7 = 42 \text{ days}$$

$$\therefore B \text{ alone complete 50\% work} = 42 \times \frac{50}{100} = 21 \text{ days}$$

71. (4)

$$72. (3) \text{ Require average} = \frac{230 + 220 + 210}{3} - \frac{110 + 120 + 140 + 125 + 150 + 165}{5}$$

$$= 220 - 135 = 85$$

73. (2) $7 \times 11 \times 13 = 1001$, when any 3 digit number multiplied by 1001 then it repeats itself and always completely divisible by 7, 11 and 13.

Let 3 digit number be pqr.

$$pqr \times 1001 = 5z3x4y$$

$$pqr pqr = 5z3x4y$$

Compare both sides,

$$p = 5, q = 4 \text{ and } r = 3$$

Hence the number = 543543

By comparing the number,

$$x = 5, y = 3 \text{ and } z = 4$$

$$\therefore x + y - z = 5 + 3 - 4 = 4$$

$$74. (4) x + \frac{1}{x} = 2\sqrt{5}$$

$$\left(x + \frac{1}{x}\right)^3 = 40\sqrt{5}$$

$$x^3 + \frac{1}{x^3} + 3 \times 2\sqrt{5} = 40\sqrt{5}$$

$$x^3 + \frac{1}{x^3} = 34\sqrt{5}$$

$$\therefore \frac{x^4 + \frac{1}{x^2}}{x^2 + 1} = \frac{x^3 + \frac{1}{x^3}}{x + \frac{1}{x}} \quad (\text{Divided by } x)$$

$$= \frac{34\sqrt{5}}{2\sqrt{5}} = 17$$

$$75. (4) \text{ Required \%} = \left(\frac{125 + 165}{205 + 220 + 225} \times 100\right)\%$$

$$= \left(\frac{290}{650} \times 100\right)\% = 44.6\%$$

MEANINGS IN ALPHABETICAL ORDER

Words	Meaning in English	Meaning in Hindi
Acrobat	an entertainer who performs spectacular gymnastic feats	नट
Bang	a sudden loud noise	धमाका
Distinguish	recognize or treat (someone or something) as different	अंतर करना
Expunge	erase or remove completely (something unwanted or unpleasant)	हटाना
Obese	grossly fat or overweight	मोटा
Ponder	think about (something) carefully, especially before making a decision or reaching a conclusion	विचार करना

23 AUGUST (12 PM) (ANSWER KEY)

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

78. (3) The correct spelling of Preshious is Precious.
79. (2) Use 'clear enough' instead of 'too much clear'. 'Too much' is used before a noun.
82. (1) The sentence is in past tense and also using a singular form of a verb for a plural subject 'the students' is not correct.
86. (2) The Indirect Speech is in past tense, hence, change 'will' into 'would'.
90. (3) The correct spelling of Vacine is Vaccine.