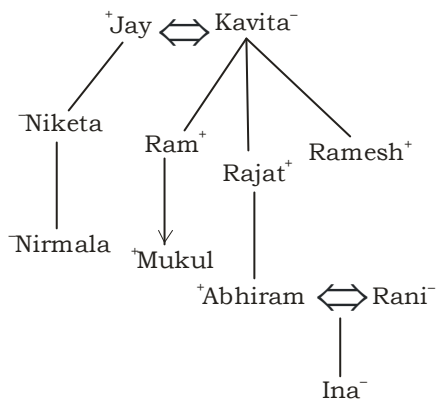
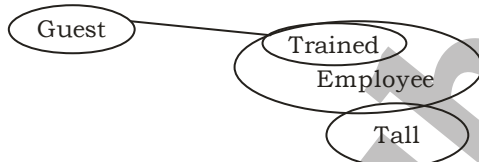


17 AUGUST (3 PM) (SOLUTION)

1. (2) $\underline{P} \underline{Q} \underline{R} \underline{S} / \underline{P} \underline{Q} \underline{R} \underline{S} / \underline{P} \underline{Q} \underline{R} \underline{S} / \underline{P} \underline{Q} \underline{R} \underline{S}$
2. (2)
3. (4) Except Mistress, other are related to each other.
4. (3)

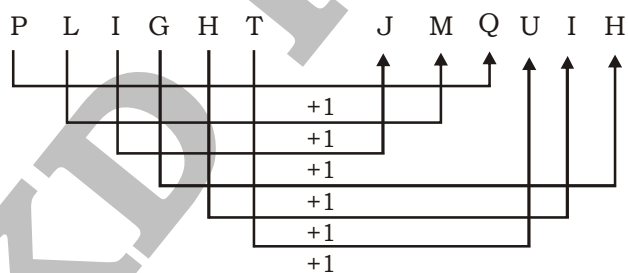


5. (1) Jay is great grandfather of Ina.

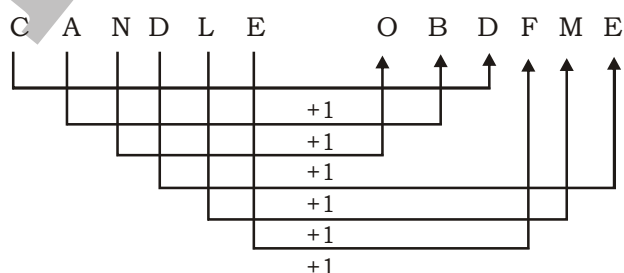


I. False II. True III. False
Hence, only conclusion II follows.

6. (3)
7. (2) As,



Similarly,



8. (3) Flower is related to Flower Production, while Earthworm is related to Worm rearing.

9. (2)

10. (2) The child of Wolf is Lamb, while the child of Cockroach Nymph.

11. (1) $48 * 12 * 8 * 15 * 3 * 44$

Put the sign,

$$48 \div 12 \times 8 + 15 - 3 = 44$$

$$4 \times 8 + 15 - 3 = 44$$

$$47 - 3 = 44$$

$$44 = 44$$

12. (1) 215 231 256 292 341

$$\begin{array}{ccccccc} & \uparrow & & \uparrow & & \uparrow & & \uparrow \\ & \downarrow & & \downarrow & & \downarrow & & \downarrow \\ & +4^2 & & +5^2 & & +6^2 & & +7^2 \end{array}$$

13. (1) Required number = $\frac{21(21-1)}{2} = 210$

14. (2) As, $7^2 + 2 = 51$

$$7 \times 3 + 1 = 22$$

Similarly, $6^2 + 2 = 38$

$$6 \times 3 + 1 = 19$$

15. (4) As, $(24 - 4) = 20 \Rightarrow 20 \times 20 - 4 = 396$

And, $(28 - 4) = 24 \Rightarrow 24 \times 24 - 4 = 572$

Similarly, $(30 - 4) = 26 \Rightarrow 26 \times 26 - 4 = 672$

16. (2) 17. (2) 18. (2) 19. (4)

20. (2) Except (2), second number is dissible by first number.

21. (1) (1) $\begin{array}{ccc} Q & T & V \\ \downarrow & \downarrow & \downarrow \\ +3 & +2 & \end{array}$ (2) $\begin{array}{ccc} M & P & S \\ \downarrow & \downarrow & \downarrow \\ +3 & +3 & \end{array}$ (3) $\begin{array}{ccc} P & S & V \\ \downarrow & \downarrow & \downarrow \\ +3 & +3 & \end{array}$ (4) $\begin{array}{ccc} N & Q & T \\ \downarrow & \downarrow & \downarrow \\ +3 & +3 & \end{array}$

22. (3)

$$\begin{array}{ccccccc} & & -1 & & -4 & & -7 \\ & \downarrow & & \downarrow & & \downarrow & \\ A & B & D & C & E & I & E & H & N & G & K & S \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ +1 & +2 & & +2 & +4 & & +3 & +6 & & +4 & +8 \end{array}$$

23. (3) 3. $\rightarrow$ Hydroelectric $\rightarrow$ 5. Hydrology $\rightarrow$ 2. Hydroplane $\rightarrow$ 4. Hydroxide $\rightarrow$ 1. Hygienic

24. (2) As, (4, 8, 16) $\rightarrow$ All the numbers are divisible by 2

Similarly, (20, 24, 16) $\rightarrow$ All the numbers are divisible by 2

25. (2) As,

$$\begin{array}{ccccccc} M & A & N & G & O & & 13 - 2 - 42 - 28 - 75 \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ & & & & & 13 & \\ & & & & & 1 \times 2 & \\ & & & & & 14 \times 3 & \\ & & & & & 7 \times 4 & \\ & & & & & 15 \times 5 & \end{array}$$

Similarly,

$$\begin{array}{ccccccc} A & P & P & L & E & & 1 - 32 - 48 - 48 - 25 \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ & & & & & 1 & \\ & & & & & 16 \times 2 & \\ & & & & & 16 \times 3 & \\ & & & & & 12 \times 4 & \\ & & & & & 5 \times 5 & \end{array}$$

27. (2) The remarkable observation that all free falling objects fall with the same acceleration was first proposed by Galileo Galilei nearly 400 years ago
28. (4) The noble gases are monatomic gases. Examples: Helium, Radon, Neon, Xenon, Argon, Krypton.
29. (4) The Idu Mishmi language is a small language spoken by the Mishmi people in Dibang Valley district, Lower Dibang Valley district, Lohit district, East Siang district, Upper Siang district of the Indian state of Arunachal Pradesh and in Zayü County of the Tibet Autonomous Region, China.
30. (1) The vast stretch of fertile Bihar Plain is divided by the Ganges River into two unequal parts - North Bihar and the South Bihar.
31. (1) Manpreet Singh will captain the Indian men's hockey team at Tokyo 2020 while Rani Rampal will be incharge of the women's team.
34. (4) The Chief of Army Staff General MM Naravane was conferred the honorary rank of General of the Nepali Army by President Bidya Devi Bhandari on Thursday. He was honoured at a special ceremony at the President's official residence 'Shital Niwas' in Kathmandu.
36. (3) The Ministry of Tribal Affairs (MoTA) received the coveted "SKOCH Challenger Award"-"Best Performance in e-Governance" today for its various initiatives taken during last year. The Award was received by the Union Minister for Tribal Affairs, Shri Arjun Munda, at the Virtual SKOCH Summit.
37. (2) Chapter III - Language of the Supreme Court, High Courts, etc. Chapter 3 covers articles 348 and 349, and writes that the official language of the Supreme Court of India, the High Courts of India as well as any authoritative legal texts should be English.
45. (4) Buddhism. Mahavira and Buddha are generally accepted as contemporaries (circa 5th century BCE). Buddhist texts refer to Mahavira as Nigantha Nataputta.
46. (1) Indian Peace Keeping Force (IPKF) was the Indian military contingent performing a peacekeeping operation in Sri Lanka between 1987 and 1990.
49. (2) Mangifera indica (MI), also known as mango, aam, it has been an important herb in the Ayurvedic and indigenous medical systems for over 4000 years. Mangoes belong to genus Mangifera which consists of about 30 species of tropical fruiting trees in the flowering plant family Anacardiaceae

51. (3) Actual average = $\frac{40 \times 45 - 35 + 25 + 38 - 32}{40}$

$$= \frac{1800 - 10 + 6}{40} = \frac{1796}{40} = 44.9 \approx 44.65$$

52. (3) $4\sin^2(2x - 10)^\circ = 3$

$$\sin^2(2x - 10)^\circ = \frac{3}{4}$$

$$\sin(2x - 10)^\circ = \frac{\sqrt{3}}{2}$$

$$\sin(2x - 10)^\circ = \sin 60^\circ$$

$$(2x - 10)^\circ = 60^\circ$$

$$2x = 70^\circ$$

$$x = 35^\circ$$

$$\therefore \frac{\sin^4(x - 5)^\circ + \cos^4(x - 5)^\circ}{1 - 2\sin^2(3x - 15)^\circ \cos^2(3x - 15)^\circ} = \frac{\sin^4(35 - 5)^\circ + \cos^4(35 - 5)^\circ}{1 - 2\sin^2(3 \times 35 - 15)^\circ \cos^2(3 \times 35 - 15)^\circ}$$

$$= \frac{\sin^4 30^\circ + \cos^4 30^\circ}{1 - 2 \times 1 \times 0} = \frac{\left(\frac{1}{2}\right)^4 + \left(\frac{\sqrt{3}}{2}\right)^4}{1 - 2 \times 1 \times 0} = \frac{1}{16} + \frac{9}{16} = \frac{5}{8}$$

53. (2) Let the present age of A and B be $7x$ and $8x$.

ATQ,

$$\frac{7x+6}{8x+6} = \frac{8}{9}$$

$$63x + 54 = 64x + 48$$

$$x = 6$$

$\therefore$ Present age of C = $7 \times 6 + 10 = 52$ years

54. (4) MP = 240

$$SP = 240 \times \frac{82}{100} = 196.80$$

$$CP = \frac{196.80}{123} \times 100 = 160$$

55. (1) $x^2 + 9y^2 + 4z^2 = 12(x - 2y + 2z) - 88$

$$x^2 + (3y)^2 + (2z)^2 - 12x + 24y - 24z + 88 = 0$$

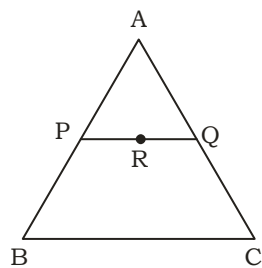
$$x^2 + 6^2 - 12x + (3y)^2 + 4^2 + 24y + (2z)^2 + 6^2 - 24z = 0$$

$$(x - 6)^2 + (3y + 4)^2 + (2z - 6)^2 = 0$$

$$x = 6, y = -\frac{4}{3} \text{ and } z = 3$$

$$\therefore x - 3y + z = 6 - 3 \times -\frac{4}{3} + 3 = 13$$

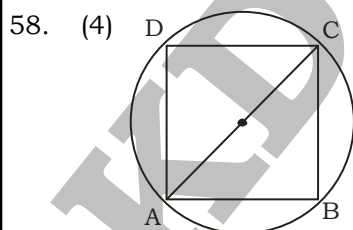
56. (3) PR : RQ = 3 : 5



$$PQ = \frac{20}{9} \times 8 = 32 \text{ cm}$$

$$\therefore BC = 2 \times PQ = 2 \times 32 = 64 \text{ cm}$$

57. (2) Required % = $\left(\frac{825}{1250} \times 100 \right) \% = 66\%$



$$\text{Radius} = 5 \text{ cm}$$

$$AC = 5 \times 2 = 10 \text{ cm}$$

$$\text{Side of square} = \frac{10}{\sqrt{2}} \text{ cm}$$

$$\therefore \text{Area} = \left(\frac{10}{\sqrt{2}} \right)^2 = 50 \text{ cm}^2$$

59. (1) $A = 7700$

$R = 10\%$

$$A = P \left(1 + \frac{R}{100} \right)^T$$

$$7700 = P \left(1 + \frac{10}{100} \right)^T$$

$$P = \frac{7700}{110} \times 100 = 7000$$

Now,

$$A = 7000 + 4000 = 11000$$

$$A = P \left(1 + \frac{R}{100} \right)^T$$

$$11000 = P \left(1 + \frac{10}{100} \right)^T$$

$$\therefore P = \frac{11000}{110} \times 100 = 10000$$

60. (4)

61. (4) Let the number of red balls = 100

No. of white balls = 160

$$\text{No. of green balls} = 160 \times \frac{87.5}{100} = 140$$

$$\text{Ratio of red, white and green balls} = 100 : 160 : 140 = 5 : 8 : 7$$

$$\therefore \text{No. of green balls} = \frac{120}{20} \times 7 = 42$$

62. (3) 45082 K is divisible by 3. So, $(4 + 5 + 0 + 8 + 2 + K)$ is also divisible by 3.

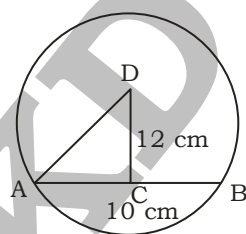
$(19 + K)$ is divisible by 3.

The greatest value of $K = 8$

The smallest value of $K = 2$

$$\therefore \text{Required sum} = 8^2 + 2^2 = 68$$

63. (4)



$$AC = \frac{10}{2} = 5\text{cm}$$

$$OC = 12\text{ cm}$$

$$OA = \sqrt{5^2 + 12^2} = 13\text{cm}$$

$$\therefore \text{Diameter} = 13 \times 2 = 26\text{ cm}$$

64. (1) Required number of employee = $800 \times \frac{22}{100} = 176$

65. (1) $\left(\frac{7}{16} \div \frac{1}{2} + \frac{1}{5}\right) \times \frac{4}{5} - \frac{1}{3} \times \frac{5}{8} \div \frac{1}{2} \times \frac{3}{4}$

$$= \left(\frac{7}{16} \div \frac{1}{10}\right) \times \frac{4}{5} - \frac{1}{3} \times \frac{5}{8}$$

$$= \frac{7}{10} \times \frac{10}{1} \times \frac{4}{5} - \frac{1}{3} \times \frac{5}{8} \times \frac{2}{1} + \frac{3}{4}$$

$$= \frac{7}{2} - \frac{5}{12} + \frac{3}{4}$$

$$= \frac{42 - 5 + 9}{12}$$

$$= \frac{46}{12} = \frac{23}{6}$$

66. (2) Let a man complete '1' piece of work in a day.
Then total work = 20 unit

Then by statement 1st days = 1 man $\times$ 1 work/day = 1

Then by statement 2nd day = two man $\times$ 1work/day = 2

Then by statement 3rd day = 3 man $\times$ 1work/day = 3

Let the whole work will be completed in N day.

Then total work = 1 + 2 + 3 + + n = 20

$$\frac{n(n+1)}{2} = 20$$

$$n(n+1) = 40$$

$$n = 6 \text{ days (approx)}$$

67. (3) CP = 720

$$\text{MP} = 900$$

$$\text{SP} = 720 + 720 \times \frac{5x}{3 \times 100} = (720 + 12x)$$

$$720 + 12x = 900 - 9x$$

$$21x = 180$$

$$x = \frac{180}{21} = \frac{60}{7} = 8\frac{4}{7}\%$$

68. (2) Total no of students enrolled in institute Q = $7500 \times \frac{30}{100} = 2250$

$$\text{Total no. of students passes from institute is} = 4000 \times \frac{24}{100} = 960$$

69. (*) Required ratio = 265 : 250 = 53 : 50

70. (4)

71. (2) Let the speed of man in still water and speed of current be u and v respectively.
ATQ,

$$\frac{8}{u+v} = \frac{6}{u-v}$$

$$8u - 8v = 6u + 6v$$

$$24 = 16v$$

$$\frac{u}{v} = \frac{16}{8} = \frac{2}{1}$$

$$u : v = 2 : 1$$

Let u and v be $2x$ and x .

Are

$$\frac{24}{2x+x} + \frac{24}{2x-x} = \frac{7}{4}$$

$$\frac{24}{3x} + \frac{24}{x} = \frac{7}{4}$$

$$\frac{168+216}{63x} = \frac{7}{4}$$

$$x = \frac{384 \times 4}{63 \times 7} \approx 4$$

72. (1) $7 \cos^2 \theta + 5 \sin^2 \theta - 6 = 0$

$$7 \cos^2 \theta + 5 - 5 \cos^2 \theta - 6 = 0$$

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

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

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

$$\cos \theta = \cos 45^\circ$$

$$\theta = 45^\circ$$

$$\therefore \sqrt{\frac{\operatorname{cosec} \theta + \tan \theta}{\sec \theta - \cot \theta}} = \sqrt{\frac{\operatorname{cosec} 45^\circ + \tan 45^\circ}{\sec 45^\circ - \cot 45^\circ}}$$

$$= \sqrt{\frac{\sqrt{2}+1}{\sqrt{2}-1} \times \frac{\sqrt{2}+1}{\sqrt{2}+1}} = \sqrt{(\sqrt{2}+1)^2} = \sqrt{2}+1$$

73. (4) $4x^4 = 5x^2 - 1$

$$4x^4 - 5x^2 + 1 = 0$$

$$4x^4 - 4x^2 - x^2 + 1 = 0$$

$$4x^2(x^2 - 1) - 1(x^2 - 1) = 0$$

$$(4x^2 - 1)(x^2 - 1) = 0$$

$$x = 1 \left(\because x > \frac{1}{\sqrt{2}} \right)$$

$$\therefore 2x^2 - x - 1 = 2 \times 1 - 1 - 1 = 0$$

$$\begin{aligned}
 74. \quad (2) \quad & \frac{\sqrt{2} \tan(60^\circ - \theta) \tan(30^\circ + \theta)}{\sin^2(45^\circ + \theta) + \sin^2(45^\circ - \theta)} \\
 &= \frac{\sqrt{2} \times 1}{1} \left[\begin{array}{l} \tan(60^\circ - \theta) \tan(30^\circ + \theta) = 1 \\ \sin^2(45^\circ + \theta) + \sin^2(45^\circ - \theta) = 1 \end{array} \right] \\
 &= \sqrt{2}
 \end{aligned}$$

$$\begin{aligned}
 75. \quad (4) \quad & \frac{108 \times 108 \times 108 - 92 \times 92 \times 92}{108 \times 108 + 92 \times 92 + 108 \times 92} \\
 &= \frac{(108)^3 - (92)^3}{(108)^2 + (92)^2 + (108 \times 92)} \\
 &= \frac{(108 + 92) \left[(108)^2 + (92)^2 + (108 \times 92) \right]}{(108)^2 + (92)^2 + (108 \times 92)} \\
 &= 108 - 92 = 16
 \end{aligned}$$

MEANINGS IN ALPHABETICAL ORDER

Words	Meaning in English	Meaning in Hindi
Accomplice	a person who helps another commit a crime	साथी
Adventurer	a person who enjoys or seeks adventure	साहसी
Allude	suggest or call attention to indirectly; hint at	संकेत करना
Ambush	a surprise attack by people lying in wait in a concealed position	घात लगाना
Astound	shock or greatly surprise	हक्का-बक्का
Comedian	an entertainer whose act is designed to make an audience laugh	हास्य अभिनेता
Editorial	relating to the commissioning or preparing of material for publication	संपादकीय
Groan	make a deep inarticulate sound in response to pain or despair	कराहना
Grumble	complain about something in a bad-tempered way	बड़बड़ाना
Implicate	show (someone) to be involved in a crime	फंसाना
Integrate	combine (one thing) with another so that they become a whole	एकीकृत
Kernel	a softer, usually edible part of a nut, seed, or fruit stone contained within its hard shell	गुठली
Obituary	a notice of a death, especially in a newspaper, typically including a brief biography of the deceased person	शोक संदेश
Pamper	indulge with every attention, comfort, and kindness; spoil	संतुष्ट करना
Parting	the action of leaving or being separated from someone	जुदाई
Prosper	succeed in material terms; be financially successful	कृतार्थ होना
Pulp	a soft, wet, shapeless mass of material	गूदा
Robbed	take property unlawfully from (a person or place) by force or threat of force	लुट गया
Segregate	set apart from the rest or from each other; isolate or divide	अलग
Wander	walk or move in a leisurely, casual, or aimless way	विचलन

17 AUGUST (3 PM) (ANSWER KEY)

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

81. (4) The sentence is in passive voice.
84. (2) The correct spelling of Adress is Address.
89. (4) 'for' is replaced by 'to'.
91. (4) Replace 'windy' by 'wind'.
92. (2) The correct spelling of Camoflage is Camouflage.