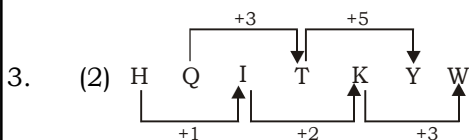


18 AUGUST (3 PM) (SOLUTION)

1. (4) Arc is a part of Circle, while stem is a part of plant.
2. (3)

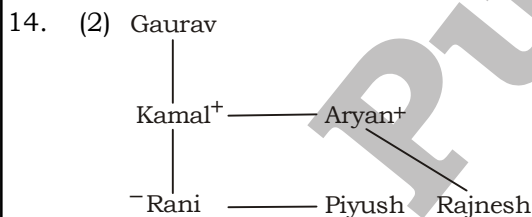


4. (1) Except vision, others are related to each other.
5. (1) 3. → Gestation → 5. Gesture → 4. Glycerine → 2. Glycogen → 1. Gravity
6. (4)
7. (4) $483 * 23 * 93 * 16 * 4 * 50$

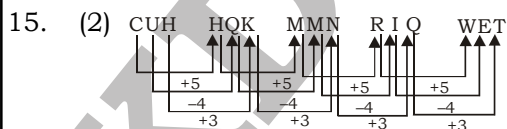
Put the signs,
 $483 \div 23 + 93 - 16 \times 4 = 50$
 $21 + 93 - 64 = 50$
 $114 - 64 = 50$
 $50 = 50$

8. (4) Let the present age of Sangeeta be x years.
 Present age of Ramesh = $(x + 7)$ years
 Are,
 $(x + 7 + 6) = 48$
 $x = 48 - 13 = 35$ years
9. (1) 10. (1) 11. (2) 12. (1)

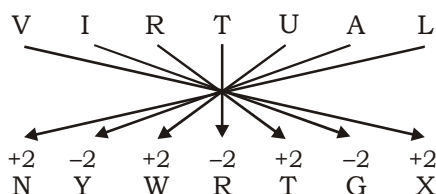
13. (1) (1) $78 \times 3 + 5 = 239$
 (2) $66 \times 3 + 5 = 203 \neq 197$
 (3) $107 \times 3 + 5 = 326$
 (4) $101 \times 3 + 5 = 308$



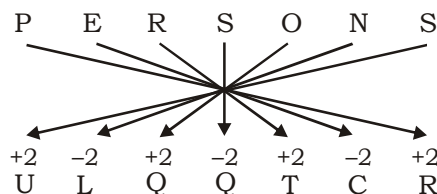
Hence, Aryan is the paternal uncle of Piyush.



16. (4) Ranchi is the capital of Jharkhand, while Shillong is the capital of Meghalaya.
17. (2)
18. (1) As,



Similarly,



19. (4)

20. (1) 

I. False II. False III. True

Hence, only conclusion III follows.

21. (3) $(8 - 1) \times 2 + 2 = 16$

$(10 - 1) \times 2 + 3 = 21$

$(6 - 1) \times 2 + 1 = 11$

22. (1) As,

$4 \times 2 + (4 - 2) = 10$

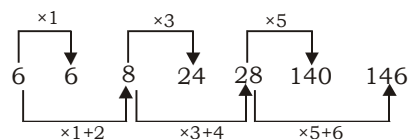
$10 \times 5 + 3 = 53$

Similarly,

$7 \times 2 + (7 - 2) = 19$

$19 \times 5 + 3 = 98$

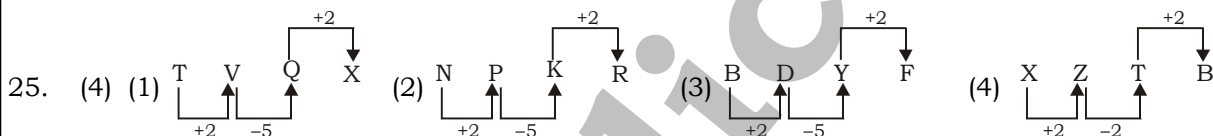
23. (3)



24. (3) As, $3^2 + 4 = 13$

And, $6^2 + 31 = 67$

Similarly, $5^2 + 20 = 45$



27. (3) The International Olympic Committee (IOC; French: Comité international olympique, CIO) is a non-governmental sports organisation based in Lausanne, Switzerland.

29. (1) Actor Adil Hussain has bagged the Best Actor award at the Indo German Film Week in Berlin, for two of his recent performances - Pareeksha and Nirvana Inn.

30. (3) Prime Minister Shri Narendra Modi along with Prime Minister of Vietnam H.E. Nguyen Xuan Phuc will co-chair the 17th ASEAN-India Summit on 12 November 2020. The Leaders of all ten ASEAN Member States will participate in the Summit.

31. (3) Kolleru Lake is the largest freshwater lake and is located in Andhra Pradesh. Kolleru is located between Krishna and Godavari delta and covers an area of 308 km². The lake serves as a natural flood-balancing reservoir for these two rivers.

33. (4) Sujal Mission Aims To Provide Piped Drinking Water Across Odisha. Odisha government launched the 'Sujal- Drink From Tap Mission' on October 13, 2020, to supply tap drinking water throughout the state.

34. (3) RK Shanmukham Chetty was the first finance minister of India. R.K. Shanmukham Chetty was born in Coimbatore on 17th October 1892.

37. (1) The Malthusian Theory Of Population Involves Arithmetic Food Supply Growth And Exponential Population Growth. This Theory Was First Published In 1798 In Thomas Robert Malthus's Piece.

38. (1) Government has approved the appointment of Belarussian coach Nikolai Snesev as the middle- and long-distance coach of the Indian athletics team.

40. (2) Who among the following was the founder of Rashtrakutas? Explanation: Dantidurga, also known as Dantivarman or Dantidurga II was the founder of the Rashtrakuta Empire of Manyakheta.

41. (4) Bihar's first state-level bird festival 'Kalrav' will be held at the world famous Nagi-Nakti bird sanctuaries in the Jamui district from January 15.

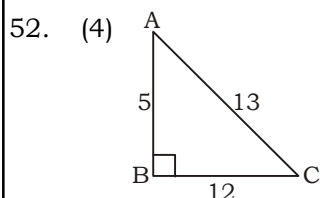
42. (1) India's first Labour Movement museum to come up in Kerala.

43. (4) Makaravilakku is an annual festival held on Makara Sankranti in Kerala, India at the shrine of Sabarimala.

44. (4) The National Disaster Response Force (NDRF) Raising Day is celebrated on January 19 to mark its formation.

46. (2) The 1947 Indian Independence Act [1947 c. 30 (10 & 11. Geo. 6.)] is an Act of the Parliament of the United Kingdom that partitioned British India into the two new independent dominions of India and Pakistan.
47. (4) The Aryabhata spacecraft, named after the famous Indian astronomer, was India's first satellite; it was completely designed and fabricated in India and launched by a Soviet Kosmos-3M rocket from Kapustin Yar on April 19, 1975.
48. (1) The Rani of Jhansi Regiment was the women's regiment of the Indian National Army, the armed force formed by Indian nationalists in 1942 in Southeast Asia with the aim of overthrowing the British Raj in colonial India, with Japanese assistance.
49. (4) Nitric acid is used in the purification of metals like gold and silver since it dissolves the impurities like various metal oxides present on the surface of gold (or) Gold being insoluble in HNO_3 , remains insoluble.

51. (2) Required% = $\left(\frac{55}{1000} \times 100\right)\% = 5.5\%$



$$\text{Smallest altitude} = \frac{5 \times 12}{13} = 4.6 \text{ cm}$$

53. (4) $5M \times 20 = 10W \times 15$
 $100M = 150W$

$$\frac{M}{W} = \frac{3}{2} = 3 : 2$$

$$\text{Total work} = 100$$

$$2M + 6W = 6 \text{ men}$$

$$\text{Work done in 9 days} = 5 \times 6 = 30$$

$$\text{Remaining work} = 100 - 30 = 70$$

$$\text{Now, total men} = 4 + 1 = 5 \text{ men}$$

$$\therefore \text{Required time} = \frac{70}{5} = 14 \text{ days}$$

54. (1) $x - \frac{1}{x} = \sqrt{77}$

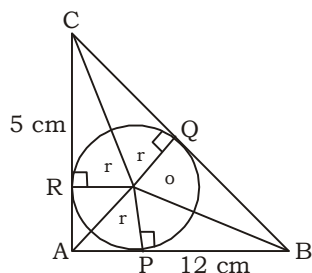
$$x^3 - \frac{1}{x^3} - 3 \times x \times \frac{1}{x} \left(x - \frac{1}{x}\right) = 77\sqrt{77}$$

$$x^3 - \frac{1}{x^3} - 3 \times \sqrt{77} = 77\sqrt{77}$$

$$x^3 - \frac{1}{x^3} = 77\sqrt{77} + 3\sqrt{77}$$

$$x^3 - \frac{1}{x^3} = 80\sqrt{77}$$

55. (4)



$$OP = OQ = OR = r \text{ cm}$$

$$AC^2 + AB^2 = BC^2$$

$$BC^2 = 5^2 + 12^2 = 169$$

$$BC = 13 \text{ cm}$$

$$\text{Area of } \triangle ABC = \text{Area of } \triangle OAB + \text{Area of } \triangle ABC + \text{Area of } \triangle OCA$$

$$30 = \frac{1}{2} \times AB \times AC = \frac{1}{2} \times r \times AB + \frac{1}{2} \times r \times BC + \frac{1}{2} \times r \times CA$$

$$30 = \frac{1}{2} \times 5 \times 12 = \frac{1}{2} \times r \times 12 + \frac{1}{2} \times r \times 13 + \frac{1}{2} \times r \times 5$$

$$30 = 15r$$

$$r = \frac{30}{15} = 2 \text{ cm}$$

56. (4) $(a - b)^3 = a^3 - b^3 - 3ab(a - b)$

$$a^3 = 2349 - 3ab(9)$$

$$729 = 2349 - 27ab$$

$$27ab = 1620$$

$$ab = \frac{1620}{27} = 60$$

$$(a - b)^2 = a^2 + b^2 - 2ab$$

$$a^2 = a^2 + b^2 - 2 \times 60$$

$$a^2 + b^2 = 81 + 120 = 201$$

$$\therefore (a + b)^2 - ab = 201 + 60 = 261$$

57. (4) $441 \div \left[270 \div \frac{3}{7} + \left(17 \div \frac{1}{3} \right) - \left(8\frac{1}{2} - \frac{5}{2} \right) \right] = 441 \div \left[270 \div \frac{7}{3} + (51) - \left(\frac{17}{2} - \frac{5}{2} \right) \right]$

$$= 441 \div [630 + 51 - 6] = 441 \div 675 = \frac{441}{675} = \frac{49}{75}$$

58. (2) $\sin(A + B) = 1$

$$\sin(A + B) = \sin 90^\circ$$

$$A + B = 90^\circ \quad \dots(i)$$

$$\cos(A - B) = \frac{\sqrt{3}}{2}$$

$$\cos(A - B) = \cos 30^\circ$$

$$A - B = 30^\circ \quad \dots(ii)$$

Adding (i) and (ii),

$$A = 120^\circ$$

$$A = 60^\circ$$

Put the value of A in equation (i),

$$B = 90^\circ - 60^\circ = 30^\circ$$

$$\therefore \frac{5 \sin^2 B + 4 \tan^2 A}{2 \sin B \cos A} = \frac{5 \sin^2 30^\circ + 4 \tan^2 60^\circ}{2 \sin 30^\circ \cos 60^\circ}$$

$$= \frac{5 \times \left(\frac{1}{2}\right)^2 + 4 \times (\sqrt{3})^2}{2 \times \frac{1}{2} \times \frac{1}{2}} = \frac{5 \times \frac{1}{4} + 12}{\frac{1}{2}}$$

$$= \frac{53}{4} \times \frac{2}{1} = \frac{53}{2} = 26\frac{1}{2}$$

59. (3) Required% = $\left(\frac{105 - 70}{70} \times 100\right)\% = 50\%$

60. (4) Required no. of persons = $(34 - 26) + (40 - 34) = 14$

61. (4) Alloy C contains = $\frac{4}{9} \times \left(\frac{5}{7} + \frac{3}{7}\right) : \frac{5}{9} \left(\frac{2}{7} + \frac{4}{7}\right)$

$$= \left(\frac{4}{9} \times \frac{8}{7}\right) : \left(\frac{5}{9} \times \frac{6}{7}\right) = 32 : 30 = 16 : 15$$

$$\therefore \text{Required \%} = \left(\frac{15}{31} \times 100\right)\% = 48\frac{4}{9}\%$$

62. (3) CP = ₹ 100

SP = ₹ 108

Now, SP = ₹ 85

ATQ, $(108 - 85) \rightarrow 2553$

$$100 \rightarrow \frac{2553}{23} \times 100 = ₹ 11100$$

$$\therefore \text{SP} = 11100 \times \frac{118}{100} = ₹ 13098$$

63. (1) $a + b + c = 0$

$$\therefore \frac{(b+c)^2}{bc} + \frac{(c+a)^2}{ca} + \frac{(a+b)^2}{ab} = \frac{(-a)^2}{bc} + \frac{(-b)^2}{ca} + \frac{(-c)^2}{ab}$$

$$= \frac{a^3 + b^3 + c^3}{abc}$$

$$(\because a^3 + b^3 + c^3 = 0)$$

$$= \frac{3abc}{abc} = 3$$

64. (3)

65. (1) Total CP = $4600 + 500 = ₹ 5100$

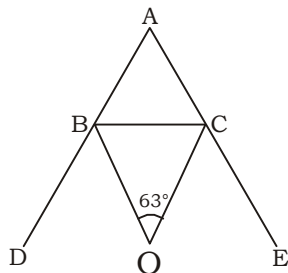
$$\text{MP} = 5100 \times \frac{108}{100} = ₹ 5508$$

$$\text{Discount} = 5508 - 4681.80 = ₹ 826.20$$

$$\therefore x\% = \left(\frac{826.20}{5508} \times 100\right)\% = 15\%$$

66. (2)

67. (3)



$$\angle BOC = 90^\circ - \frac{1}{2} \angle A$$

$$63^\circ = 90^\circ - \frac{1}{2} \angle A$$

$$\frac{1}{2} \angle A = 90^\circ - 63^\circ$$

$$\angle A = 27^\circ \times 2 = 54^\circ$$

68. (3) $\sin^6 \theta + \cos^6 \theta = \frac{1}{3}$

$$(\sin^2 \theta + \cos^2 \theta)^3 - 3 \sin^2 \theta \cos^2 \theta = \frac{1}{3}$$

$$1 - \frac{1}{3} = 3 \sin^2 \theta \cos^2 \theta$$

$$\frac{2}{3} = (\sin \theta \cos \theta)^2$$

$$\sin \theta \cos \theta = \frac{\sqrt{2}}{3}$$

69. (1) Required ratio = $(70 + 110 + 110 + 20) : (20 + 10 + 5 + 50 + 20 + 30 + 0 + 40 + 20)$
 $= 310 : 195 = 62 : 39$

70. (2) Let the money be $4x$ and $5x$.

ATQ,

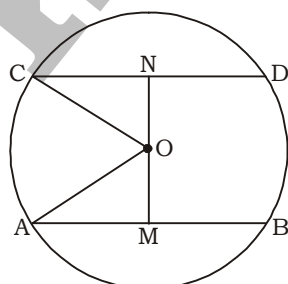
$$\frac{5x \times 5 \times 8}{100} + \frac{4x \times 4 \times 8}{100} = 4680$$

$$2x - 1.28x = 4680$$

$$x = \frac{4080}{0.72} = ₹ 6500$$

$\therefore$ Required sum = $6500 - 9 = ₹ 58500$

71. (1)



$$MN = 15 \text{ cm}$$

$$\text{Let } OM = x \text{ cm}$$

$$ON = (15 - x) \text{ cm}$$

In $\triangle OAM$,

$$OA^2 = x^2 + 6^2 \quad \dots(i)$$

In $\triangle OCN$,

$$OC^2 = (15 - x)^2 + 9^2$$

...(ii)

From (i) and (ii),

$$x^2 + 36 = 225 + x^2 - 30x + 81$$

$$30x = 270$$

$$x = 9 \text{ cm}$$

Put the value of x in (i),

$$OA^2 = 81 + 36$$

$$OA = \sqrt{117} = 3\sqrt{13} \text{ cm}$$

72. (4) Ratio of their protect between Keshav, Sumeet and Thomas
 $= 2 \times 5 : 3 \times 6 : 4 \times 9 = 10 : 18 : 36 = 5 : 9 : 18$

$$80\% \text{ of the profit} = \frac{7264}{4} \times 32 = ₹ 58112$$

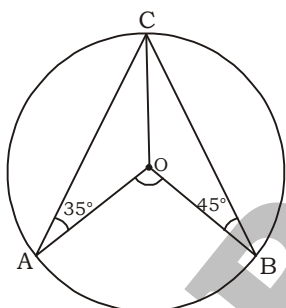
$$\therefore \text{Total profit} = \frac{58112}{80} \times 100 = ₹ 72640$$

73. (1) Total production of toys $= 31 \times 512 = 15872$

$$\therefore \text{Average productions on 19 and 20 December} = \frac{20 \times 515 + 13 \times 510 - 15872}{2}$$

$$= \frac{10300 + 6630 - 15872}{2} = \frac{1058}{2} = 529$$

74. (1)



In $\triangle OAC$,

$$\angle AOC = 180^\circ - 2 \times 35^\circ = 110^\circ$$

In $\triangle OBC$,

$$\angle BOC = 180^\circ - 2 \times 45^\circ = 90^\circ$$

$$\therefore \angle AOB = 360^\circ - (110^\circ + 90^\circ) = 160^\circ$$

75. (2) Let correct time for the train to complete the journey is x minutes.

$$\text{The train cover in } (x + 15) \text{ minutes at the speed of } 72 \text{ km/hr} = \frac{72(x + 15)}{60} \quad \dots(i)$$

$$\text{Then train cover the distance in } (x + 5) \text{ minutes at speed of } 90 \text{ km/hr} = \frac{90(x + 5)}{60} \quad \dots(ii)$$

Equation (i) and (ii),

$$\frac{72(x + 15)}{60} = \frac{90(x + 5)}{60}$$

$$72x + 1080 = 90x + 450$$

$$18x = 630$$

$$x = \frac{630}{18} = 35 \text{ minutes}$$

MEANINGS IN ALPHABETICAL ORDER

Words	Meaning in English	Meaning in Hindi
Acquire	buy or obtain (an asset or object) for oneself	अधिग्रहण करना
Annoyed	slightly angry; irritated	नाराज हो
Censure	express severe disapproval of (someone or something), especially in a formal statement	निंदा
Confer	grant or bestow (a title, degree, benefit, or right)	प्रदान करना
Conflict	a serious disagreement or argument, typically a protracted one	टकराव
Criticism	the expression of disapproval of someone or something based on perceived faults or mistakes	आलोचना
Crusade	each of a series of medieval military expeditions made by Europeans to recover the Holy Land from the Muslims in the 11 th , 12 th , and 13 th centuries	धर्मयुद्ध
Dissuade	persuade (someone) not to take a particular course of action	विरत करना
Dreamland	sleep regarded as a world of dreams	मन की तरंग
Fallacy	a mistaken belief, especially one based on unsound argument	भ्रम
Flaw	a mark, fault, or other imperfection that mars a substance or object	दोष
Instead	as an alternative or substitute	बजाय
Mutiny	an open rebellion against the proper authorities, especially by soldiers or sailors against their officers	गदर
Obtain	get, acquire, or secure (something)	प्राप्त
Paradise	(in some religions) heaven as the ultimate abode of the just	स्वर्ग
Persuade	cause to do something through reasoning	राज्जी करना
Poignant	evoking a keen sense of sadness or regret	मार्मिक
Safeguard	a measure taken to protect someone or something or to prevent something undesirable	रक्षा
Subsequently	after a particular thing has happened; afterward	बाद में
Substantially	to a great or significant extent	काफी हद तक
Tandem	a bicycle with seats and pedals for two riders, one behind the other	मिलकर
Tangible	perceptible by touch	वास्तविक
Tantamount	equivalent in seriousness to; virtually the same as	समान
Utopia	an imagined place or state of things in which everything is perfect	आदर्शलोक

18 AUGUST (3 PM) (ANSWER KEY)

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

79. (4) Two comparative degree is not used together. Remove 'more'.
84. (4) 'fall behind' is the correct phrase that means 'failing to keep up with one's competitors.'
86. (3) 'complain about' is the correct phrase. Replace 'at' by 'about'.
89. (3) 'Fifty litres of milk' denotes a singular subject. Hence, it will take a singular verb.
90. (3) The correct spelling of Helicopter is Helicopter.
94. (2) The correct spelling of Subsequently is Subsequently.