

18 AUGUST (9 AM) (SOLUTION)

1. (3)
2. (2)
3. (1) Cygnet is Child of Swan, white Poult is is child of Turkey.

4. (4) Average = $\frac{240}{3} = 80$

5. (3) $\begin{array}{ccccccc} 17 & & 20 & & 80 & & 85 & & 510 & & 517 \\ & \uparrow & & \uparrow & & \uparrow & & \uparrow & & \uparrow & & \uparrow \\ & +3 & & \times 4 & & +5 & & \times 6 & & +7 & & \end{array}$

6. (1) As, $5 \times 2 - 3 = 7$
and $27 \times 2 - 23 = 31$
Similarly, $135 \times 2 - 69 = 201$

7. (3)
8. (4) $14 * 7 * 39 * 133 * 19 * 130$
Put the sign,
 $14 \times 7 + 39 - 133 \div 19 = 130$
 $98 + 39 - 7 = 130$
 $137 - 7 = 130$
 $130 = 130$

9. (3) $\begin{array}{ccccccc} \text{DOWN} & \text{CRRU} & \text{BUMB} & \text{AXHI} & \text{ZACP} \\ \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow \\ -1 & & -1 & & -1 & & -1 \\ \uparrow & & \uparrow & & \uparrow & & \uparrow \\ +3 & & +3 & & +3 & & +3 \\ \uparrow & & \uparrow & & \uparrow & & \uparrow \\ -5 & & -5 & & -5 & & -5 \\ \uparrow & & \uparrow & & \uparrow & & \uparrow \\ +7 & & +7 & & +7 & & +7 \end{array}$

10. (3) Second is the synonym of first.
11. (3) 12. (1) 13. (3)
14. (3) $r \underline{i} u k t / r j \underline{u} k t / r \underline{i} u k \underline{t} / r i u \underline{k} t / r i \underline{u} k t$
15. (2) As, $7 \times 9 \times 4 = 252$
Similarly, $8 \times 11 \times 4 = 352$
16. (1) As,

And,

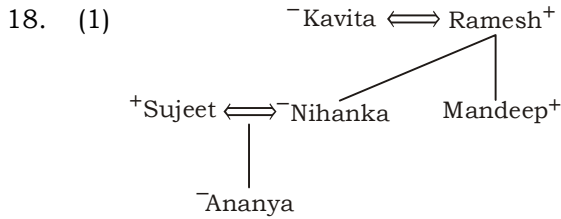
$\begin{array}{ccccccc} \text{F} & \text{O} & \text{R} & \text{E} & \text{N} & \text{S} & \text{I} & \text{C} & & 6 & 12 & 18 & 22 & 14 & 19 & 18 & 3 \\ \uparrow & & \uparrow & & \uparrow & & \uparrow & & \uparrow & & \uparrow & & \uparrow & & \uparrow & & \uparrow \\ & & & & & & & & & & 6 & & 15-3 & & 18 & & \\ & & & & & & & & & & & & 5 \times 4 + 2 & & 14 & & \\ & & & & & & & & & & & & & & 19 & & \\ & & & & & & & & & & & & & & & & 9 \times 2 \\ & & & & & & & & & & & & & & & & 3 \end{array}$

$\begin{array}{cccc} \text{D} & \text{O} & \text{R} & \text{M} & & 4 & 12 & 18 & 13 \\ \uparrow & & \uparrow & & \uparrow & & \uparrow & & \uparrow \\ & & & & & & & & 4 \\ & & & & & & & & 15-3 \\ & & & & & & & & 18 \\ & & & & & & & & 13 \end{array}$

Similarly,

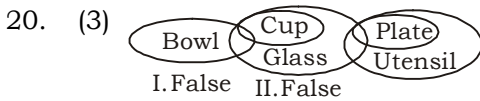
$\begin{array}{ccccccc} \text{C} & \text{A} & \text{R} & \text{A} & \text{M} & \text{E} & \text{L} & & 3 & 26 & 18 & 26 & 13 & 22 & 12 \\ \uparrow & & \uparrow & & \uparrow & & \uparrow & & \uparrow & & \uparrow & & \uparrow & & \uparrow \\ & & & & & & & & & & 3 & & 27-1 & & 18 \\ & & & & & & & & & & & & 27-1 & & 13 \\ & & & & & & & & & & & & & & 5 \times 4 + 2 \\ & & & & & & & & & & & & & & 12 \end{array}$

17. (4)

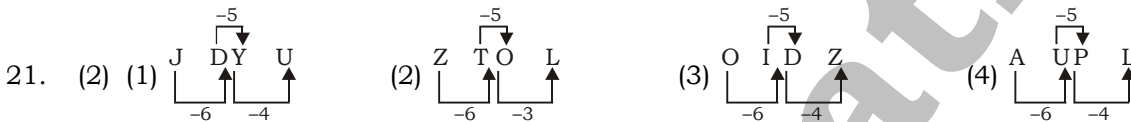


Hence, Sujit is the brother-in-law of Mandeep.

19. (1) Except Hypertensions, others are related to each other.



Hence, Neither conclusion I nor II follows



22. (1) As, $39 \rightarrow 3 \times 9 = 27$

Similarly, $43 \rightarrow 4 \times 3 = 12$

23. (3) 'YOU TOOK MY PLACE IN' $\Rightarrow$ 'COU POON LC QVAKE IJ' (Same vowel in same place)

'COMPILE' $\Rightarrow$ KOLQIVE (Same vowel in same place)

24. (4) (1) $111617 : 278 \Rightarrow 1 + 1 = 2, 1 + 6 = 7, 1 + 7 = 8$

(2) $406321 : 493 \Rightarrow 4 + 0 = 4, 6 + 3 = 9, 2 + 1 = 3$

(3) $253471 : 778 \Rightarrow 2 + 5 = 7, 3 + 4 = 7, 7 + 1 = 8$

(4) $324335 : 577 \Rightarrow 3 + 2 = 5, 4 + 3 = 7, 3 + 5 = 8 \neq 7$

25. (4) 2. Recede $\rightarrow$ 4. Recliner $\rightarrow$ 6. Recognition $\rightarrow$ 5. Reconcile $\rightarrow$ 3. Recorder $\rightarrow$ 1. Recreation

27. (1) Force is that external cause which tends to change the status of rest or the state of motion of an object

28. (3) Prime Minister Narendra Modi was conferred the "Global Goalkeeper" award by the Bill and Melinda Gates Foundation for the Swachh Bharat Abhiyan launched by his government

30. (1) "PSLV-C51, which is the 53rd mission of PSLV, will launch Amazonia-1 of Brazil as primary satellite and 18 Co-passenger satellites from Satish Dhawan Space Centre (SDSC) SHAR, Sriharikota. The launch is tentatively scheduled at 1024 Hrs IST on February 28, 2021, subject to weather conditions," the space agency said.

32. (2) The correct answer is Karewas. Karewas are lacustrine deposits (deposits in a lake) in the valley of Kashmir and in Bhadarwah Valley of the Jammu division of Jammu and Kashmir.

36. (2) Emerald. Emerald, the green variety of Beryl. Its green color, durability and rarity, make it one of the most expensive gemstones. Deep green is the most desired color in Emeralds.

39. (3) The members are elected in the elections held in 1952. As per the Fourth Schedule to the Constitution of India, the Rajya Sabha was first constituted 3 April 1952.

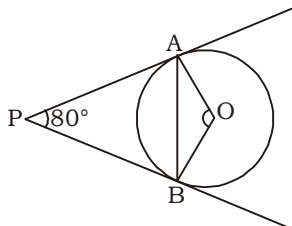
41. (2) Pilibhit Tiger Reserve has won the inaugural TX2 Award, presented by CA|TS, Global Tiger Forum, IUCN, UNDP, The Lion's Share and WWF, for its remarkable contribution to tiger conservation.

43. (2) The Government of India conferred him India's third highest civilian award the Padma Bhushan in 2021. Shroff is the only industrialist to receive Padma Bhushan in 2021. He is considered as the India's 'Crop Protection King'.

48. (2) IFSC or Indian Financial System Code is an alpha-numeric code that uniquely identifies a bank-branch participating in the NEFT system. It's a 11-digit code with the first 4 alpha characters representing the bank, and the last 6 characters representing the branch.

50. (1) Fought between 8 March and 18 July 1944, these were the turning point of one of the most gruelling campaigns of the Second World War (1939-45). The decisive Japanese defeat in north-east India became the springboard for the Fourteenth Army's subsequent re-conquest of Burma.

51. (4)



We know that the radius and tangent are $\perp^{\text{er}}$ at their point of contact.

$$\angle OBP = \angle OAP = 90^\circ$$

In $\square AOBP$,

$$\angle AOB + \angle OBP + \angle APB + \angle OAP = 360^\circ$$

$$\angle AOB = 360^\circ - 90^\circ - 90^\circ - 80^\circ = 100^\circ$$

Since, OA and OB are radius of circle, then $\triangle AOB$ is an isoscles $\triangle$.

In $\triangle AOB$,

$$\angle AOB + \angle OAB + \angle OBA = 180^\circ$$

$$100 + 2\angle OAB = 180^\circ (\angle OAB = \angle OBA)$$

$$\angle OAB = \frac{180^\circ - 100^\circ}{2} = 40^\circ$$

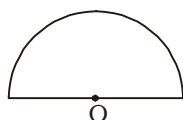
52. (4) $SI = \frac{8000 \times 12 \times 10}{100 \times 5} = ₹1920$

$$CI = 8000 \left(1 + \frac{10}{100} \right)^2 \left(1 + \frac{10 \times \frac{2}{5}}{100} \right) - 8000$$

$$= 8000 \times \frac{11}{10} \times \frac{11}{10} \times \frac{26}{25} - 8000 = ₹ 2067.20$$

$$\text{Required difference} = 2067.20 - 1920 = ₹ 147.20$$

53. (3)



$$\pi r + 2r = 25.7$$

$$(\pi + 2) = 25.7$$

$$r = \frac{25.7}{5.14} = 5 \text{ cm}$$

$$\therefore D = 5 \times 2 = 10 \text{ cm}$$

54. (1) $888x5y4$ is divisible by 72, if the number is divisible by both 8 and 9.

$5y4$ is divisible by 8, it means $y = 8$

$888x5y4$ is divisible by 9, it means $x = 1$ and $y = 8$

55. (4) Percentage of students passed $= 45 \times \frac{60}{100} + 55 \times \frac{70}{100} = 65.5$

$$\text{Percentage of students failed} = 100 - 65.5 = 34.5\%$$

56. (4) Fourth proportion $= \frac{16 \times 6}{12} = 8$

$$\text{Third proportion} = \frac{6 \times 6}{4} = 9$$

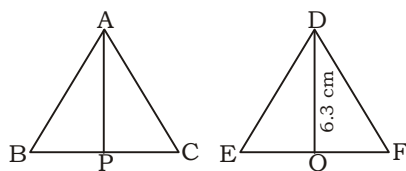
$$\therefore \text{Required ratio} = 8 : 9$$

$$\begin{aligned}
 57. \quad (1) \quad & x^4 + y^4 + x^2y^2 = 21 \\
 & (x^2 + y^2)^2 - 2x^2y^2 + x^2y^2 = 21 \\
 & (x^2 + y^2) - x^2y^2 = 21 \\
 & (7 + xy)^2 - x^2y^2 = 21 \\
 & 49 + x^2y^2 + 14xy - x^2y^2 = 21 \\
 & 14xy = -28 \\
 & xy = -2
 \end{aligned}$$

$$\therefore \frac{x}{y} + \frac{y}{x} = \frac{x^2 + y^2}{xy} = \frac{7 + xy}{xy} = \frac{7 - 2}{-2} = \frac{-5}{2}$$

$$\begin{aligned}
 58. \quad (1) \quad & \sin 37^\circ \cos 53^\circ + \cos 37^\circ \sin 53^\circ - \frac{4 \cos^2 37^\circ - 7 + 4 \cos^2 53^\circ}{\tan^2 47^\circ + 4 - \operatorname{cosec}^2 43^\circ} \\
 & = \sin^2 37^\circ + \cos^2 37^\circ - \frac{4 \cos^2 37^\circ + 4 \sin^2 37^\circ - 7}{4 - 1} \\
 & = 1 + \frac{4 - 7}{5} = 1 + \frac{3}{5} = 2
 \end{aligned}$$

59. (3)



$$\frac{\text{Area}(\triangle ABC)}{\text{Area}(\triangle DEF)} = \left(\frac{AP}{DQ} \right)^2$$

[The ratio of the area of two similar Δ is equal to the square of the corresponding sides of similar Δ]

$$\frac{100}{80} = \left(\frac{AP}{6.3} \right)^2$$

$$\frac{AP}{6.3} = \frac{10}{9}$$

$$\therefore AP = \frac{10 \times 6.3}{9} = 7 \text{ cm}$$

$$\begin{aligned}
 60. \quad (2) \quad & 3\sin^2\theta - \cos\theta - 1 = 0 \\
 & 3(1 - \cos^2\theta) - \cos\theta - 1 = 0 \\
 & 3 - 3\cos^2\theta - \cos\theta - 1 = 0 \\
 & 3\cos^2\theta + \cos\theta - 2 = 0 \\
 & 3\cos^2\theta + 3\cos\theta - 2\cos\theta - 2 = 0 \\
 & 3\cos\theta(\cos\theta + 1) - 2(\cos\theta + 1) = 0 \\
 & (3\cos\theta - 2)(\cos\theta + 1) = 0
 \end{aligned}$$

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

$$\sin\theta = \sqrt{1 - \frac{4}{9}} = \frac{\sqrt{5}}{3}$$

$$\operatorname{cosec}\theta = \frac{3}{\sqrt{5}}$$

$$\theta = \frac{2}{3} \times \frac{\sqrt{5}}{3} = \frac{2\sqrt{5}}{9}$$

$$\therefore \cot\theta + \operatorname{cosec}\theta = \frac{2\sqrt{5}}{9} + \frac{2\sqrt{3}}{\sqrt{5}} = \frac{10 + 27}{9\sqrt{5}} = \frac{27}{9\sqrt{5}} = \frac{3}{\sqrt{5}}$$

61. (1) CP = ₹100
MP = ₹125

$$SP = 125 \times \frac{90}{100} = ₹ 112.5$$

$$\text{Final SP} = 112.5 \times \frac{95}{100} = ₹ 106.875$$

ATQ,
106.875 → 2394

$$100 \rightarrow \frac{2394}{106.875} \times 100 = ₹ 2240$$

62. (2) $18 \div [26 - \{25 - (15 - 5) \div 2\}]$ of $12 + 2 - 2 \div 4 \times 16$
 $= 18 \div [26 - \{25 - 5\}]$ of 6
 $= 18 \div 36 = \frac{1}{2}$

63. (2) $\frac{1}{A} + \frac{1}{B} = \frac{1}{20}$... (i)

$$\frac{1}{B} + \frac{1}{C} = \frac{1}{24}$$
 ... (ii)

$$2A = C$$

Put the value of C in equation (ii)

$$\frac{1}{B} + \frac{1}{2A} = \frac{1}{24}$$
 ... (iii)

By solving equation (i) and (ii),

$$\frac{1}{A} + \frac{1}{B} - \frac{1}{B} - \frac{1}{2A} = \frac{1}{20} - \frac{1}{24}$$

$$\frac{2-1}{2A} = \frac{6.5}{120}$$

$$\frac{1}{2A} = \frac{1}{120}$$

$$A = 60 \text{ days}$$

Put the value of (i) in (ii),

$$\frac{1}{60} + \frac{1}{B} = \frac{1}{20}$$

$$\frac{1}{B} = \frac{1}{20} - \frac{1}{60}$$

$$\frac{1}{B} = \frac{3-1}{60}$$

$$B = 30 \text{ days}$$

$$\therefore \text{B alone 40\% work in } 30 \times \frac{40}{100} = 12 \text{ days}$$

64. (1) $\frac{1}{x} + \frac{1}{y} = -\frac{3}{10}$

$$\frac{x+y}{xy} = -\frac{3}{10}$$

$$\frac{3}{xy} = -\frac{3}{10} \quad (x+y=3)$$

$$xy = -10$$

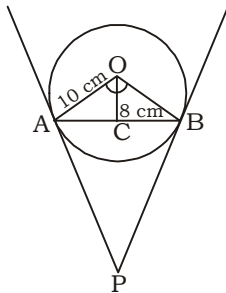
$$\therefore x^2 + y^2 = (x+y)^2 - 2xy = 3^2 - 2 \times -10 = 29$$

65. (3) Required difference = $\frac{270}{5} - \frac{170}{5} = 42 - 34 = 8$

66. (1) Required ratio = $(350 + 440) : (405 + 225) = 750 : 630 = 25 : 21$

67. (4) Required ratio = $(75 + 160) : (120 + 220) = 235 : 340 = 55 : 68$

68. (4)



Radius = $r = BO = 10$ cm

$$AC = \sqrt{10^2 - 8^2} = 6 \text{ cm}$$

$$AB = 6 \times 2 = 12 \text{ cm}$$

$\angle PBO = 90^\circ$ (A pair of tangent drawn from an external point to circle are equal and subtend 90° at the centre)

$$PA = PB$$

OP Perpendicularly bisects AB at M

$$BC = CA = 6 \text{ cm}$$

In $\triangle BOM$,

$$\sin(\angle MOB) = \sin(\angle POB) = \frac{6}{10}$$

$$\tan(\angle POB) = \frac{6}{8}$$

In $\triangle POB$,

$$\tan(\angle POB) = \frac{6}{8}$$

$$\frac{PB}{10} = \frac{6}{8}$$

$$\therefore PA = PB = \frac{60}{8} = 7.5 \text{ cm}$$

69. (2) $5x + 7y = 37 \times 12 \dots(i)$

$$7x + 5y = 35 \times 12 \dots(ii)$$

Multiplying equation (i) by 7 and equation (ii), by 5,

$$35x + 49y = 37 \times 84$$

$$35x + 25y = 39 \times 60$$

$$\begin{array}{r} 35x + 49y = 37 \times 84 \\ - \quad \quad \quad - \quad \quad \quad - \quad \quad \quad \\ 24y = 1008 \end{array}$$

$$y = \frac{1008}{24} = 42$$

70. (3) CP = ₹ 100

$$SP = ₹ 84$$

$$\text{Now, } SP = ₹ 115$$

ATQ,

$$(115 - 84) \rightarrow 192.20$$

$$100 \rightarrow \frac{192.20}{31} \times 100 = ₹ 620$$

71. (1) Let usual speed = x km/hr
ATQ,

$$\frac{150}{x-10} - \frac{150}{x} = \frac{30}{60}$$

$$\frac{150}{x-10} - \frac{150}{r} = \frac{30}{60}$$

$$\frac{150x - 150(x-10)}{x(x-10)} = \frac{1}{2}$$

$$\frac{150x - 150x + 1500}{x^2 - 10x} = \frac{1}{2}$$

$$x^2 - 10x - 3000 = 0$$

$$x^2 - 60x + 50x - 3000 = 0$$

$$x(x-60) + 50(x-60) = 0$$

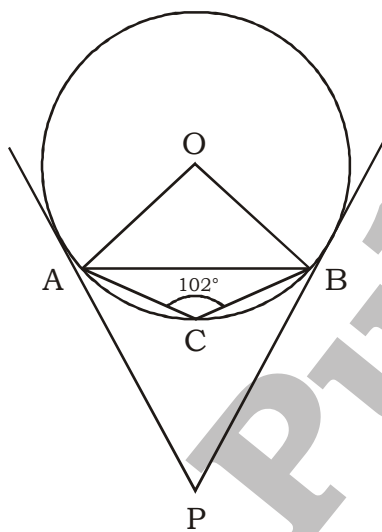
$$(x+50)(x-60) = 0$$

$$x = 60 \text{ km/hr} \quad (\because x \neq -50)$$

$$\therefore \text{Required time} = \frac{90}{60-15} = 2 \text{ hours}$$

72. (1) Required% = $\left(\frac{800-560}{800} \times 100 \right) \% = 30\%$

73. (1)



$$\text{ext } \angle AOB = 102^\circ \times 2 = 204^\circ$$

$$\text{int } \angle AOB = 360^\circ - 204^\circ = 156^\circ$$

$$\angle APB = 180^\circ - 156^\circ = 24^\circ$$

74. (1) $\frac{(375+125)^2 - (125-375)^2}{375 \times 375 - 125 \times 125} = \frac{375+125-125+375}{(375)^2 - (125)^2}$

$$= \frac{2 \times 375}{(375+125)(375-125)} = \frac{2 \times 375}{500 \times 250} = \frac{3}{2}$$

75. (1) $\sin^4 30^\circ + \cos^4 30^\circ - \sin^2 25^\circ \cos^2 65^\circ - \sin^2 65^\circ \cos^2 25^\circ$

$$= \left(\frac{1}{2} \right)^4 + \left(\frac{\sqrt{3}}{2} \right)^4 - \sin^2 25^\circ - \cos^2 25^\circ$$

$$= \frac{1}{16} + \frac{9}{16} - (\sin^2 25^\circ + \cos^2 25^\circ)$$

$$= \frac{1}{16} - 1 = \frac{10-16}{16} = \frac{-6}{16} = -\frac{3}{8}$$

MEANINGS IN ALPHABETICAL ORDER

Words	Meaning in English	Meaning in Hindi
Abolish	formally put an end to (a system, practice, or institution)	समाप्त करना
Affirm	state as a fact; assert strongly and publicly	वाणी
Alleged	(of an incident or a person) said, without proof, to have taken place or to have a specified illegal or undesirable quality	कथित
Appreciate	recognize the full worth of	सराहना करना
Celestial	positioned in or relating to the sky, or outer space as observed in astronomy	स्वर्गीय
Chameleon	a small slow-moving Old World lizard with a prehensile tail, long extensible tongue, protruding eyes that rotate independently	गिरगिट
Contemporaries	a person or thing living or existing at the same time as another	समकालीनों
Deliberate	done consciously and intentionally	सोचा-समझा
Disprove	prove that (something) is false	असत्य सिद्ध करना
Distressed	suffering from anxiety, sorrow, or pain	व्यथित
Eliminate	completely remove or get rid of (something)	हटाना
Eventually	in the end, especially after a long delay, dispute, happening by accident or chance rather than design	अंततः
Fortuitous	happening by accident or chance rather than design	आकस्मिक
Invalidate	make (an argument, statement, or theory) unsound or erroneous	अमान्य
Mourn	feel or show deep sorrow or regret for (someone or their death), typically by following conventions such as the wearing of black clothes	शोक
Rejoice	feel or show great joy or delight	आनंद

18 AUGUST (9 AM) (ANSWER KEY)

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

78. (4) Comparative degree of 'tall' is 'taller'. 'More + adjective' is used. They cannot be used together.
81. (2) Add 'her' to write it as 'to her sister's house'.
86. (2) The correct spelling of Scorpeon is Scorpion.
92. (4) The correct spelling of Hygeinic is Hygienic.
93. (3) Remove 'some'. It is redundant if there is already a 'some' before it added by 'and'.
94. (2) 'Advise' takes an infinitive after it. An Infinitive contains 'to+V1'.