ANSWER SET - 02

01. (1) 02. (1) 03. (2) 04. (4) 05. (3)
06. (2) 07. (2) 08. (1) 09. (1) 10. (3)
11. (4) 12. (3) 13. (3) 14. (1) 15. (3)
16. (3) 17. (3) 18. (1) 19. (4) 20. (4)
21. (2) 22. (1) 23. (1) 24. (3) 25. (1)
26. (1) 27. (3) 28. (4) 29. (3) 30. (1)
31. (1) 32. (1) 33. (2) 34. (4) 35. (2)
36. (2) 37. (3) 38. (1) 39. (2) 40. (3)
41. (2) 42. (2) 43. (3) 44. (1) 45. (4)
46. (2) 47. (3) 48. (3) 49. (3) 50. (1)
51. (3) 52. (4) 53. (3) 54. (1) 55. (2)
56. (2) 57. (1) 58. (4) 59. (3) 60. (1)
61. (2) 62. (4) 63. (3) 64. (3) 65. (4)
66. (3) 67. (1) 68. (2) 69. (2) 70. (4)
71 (3) 72. (2) 73. (4) 74. (4) 75. (1)
76. (2) 77. (3) 78. (2) 79. (3) 80. (3)
81. (2) 82. (4) 83. (3) 84. (1) 85. (2)
86. (2) 87. (2) 88. (3) 89. (4) 90. (3)
91. (1) 92. (3) 93. (3) 94. (3) 95. (2)
96. (2) 97. (2) 98. (2) 99. (4) 100. (2)

EXPLANATION - 02

1. (1) a **b** c/ b c **a** /c a **b**/ a b **c** /b c a/ **c** a b
2. (1) 542, 349, 248, 348, 548, 746,
3. (2) R = **59**, 68, 77, 86, 95
   U = 56, 65, 78, 87, **99**
   D = 01, 10, 23, **34**, 42
   E = 02, **11**, 20, 23, 44

4. (4) B D A **F** C G E

5. (3) 6, 10, 18, 34, **66**
   ×2-2 ×2-2 ×2-2 ×2-2

6. (2) 28 38 49 62 70 **77** 91
   +(2+8) +(3+8) +(4+9) +(6+2) −(7+0) +(7+7)

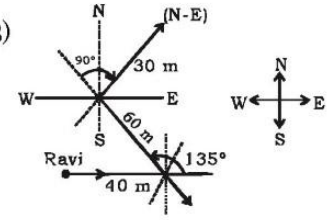
7. (2) +4 +5 +6 +7
   4 E, 8 I, 13 N, 19 T, **26 A**
   +4 +5 +6 +7

8. (1)

9. (1) K M Z S : HAPN : : GKTP : **KGTP**
   opp opp opp opp opp opp opp opp

10. (3) First is opposite of second.
11. (4) The **cougar**, commonly known as the mountain lion, is found in **South America**. Similarly, the **okapi** is a giraffid artiodactly mammal found in **Central Africa**.

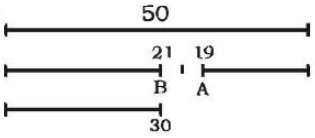
12. (3)



So, finally Ravi is walking in the North-East direction.

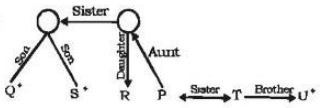
13. (3) 4th March, 1980 = Tuesday
    15th March, 1984 =
    4th March, 1984 + 11 days
    = 4 × 365 + 1(day) + 11 days
    = 4 days + 1 day + 11 days
    = 16 days
    [∵ Á only one leap year 1984 is taken]
    Thus, 16 days after Tuesday is Thursday.

14. (1)

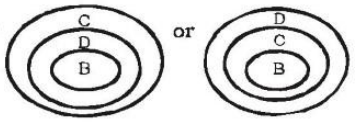


The rank of B from the top
= 51 − 21 + 1 = 30
Thus, 29 people are ahead of B

15. (3) Given,
    3 × 2 < 4 ÷ 6 + 3 < 2
    After changing the signs
    3 + 2 − 4 > 6 ÷ 3 − 2
    5 − 4 > 2 − 2
    1 > 0 (correct)
16. (3) 8 + 10 + 17 = 35
    11 + **14** + 10 = 35
    16 + 11 + 8 = 35
17. (3) 7 × 4 - 3 = 25,
    8 × 9 - 2 = 70
    Similarly,
    6 × 5 - x = 29
    30 - x = 29
    ∴ x = 30 - 29
    = 1
18. (1)
19. (4)



20. (4)



Conclusions.
I. ×
II. ×
III. ✓

21. (2) I - {D, B, A, C}
    II - {E, E, A}
    From I and II
    {D, B, E, **A**, C}
    So, A will be second.
22. (1)
23. (1) Except option (1), all others are metals.
24. (3) 'UVWX' are four consecutive alphabet. This relationship is not found in others.
25. (1) All numbers have two prime factors, except the option (1)
    (1) 12 = 2 × 2 × 3
    (2) 34 = 17 × 2
    (3) 38 = 19 × 2
    (4) 58 = 29 × 2
26. (1) ATQ,

$$\text{Depth of water} = \frac{\frac{2}{3}\pi r_1^3}{\pi r_2^2}$$

$$= \frac{2\times\left(\frac{13.5}{2}\right)^3}{3\times\left(\frac{9}{2}\right)^2}$$

$$= \frac{2\times13.5\times13.5\times13.5\times2\times2}{3\times2\times2\times9\times9}$$

$$= 10\frac{1}{8}\text{cm}$$

27. (3) Area of base = 21 sq. cm
    Area of faces = 30 sq. cm
    So, length = HCF of (area of base & area of faces)
    = 3 cm
    So, volume of cuboidal box

$$= \frac{21\times30}{3}$$

$$= 210\ \text{cm}^3$$

28. (4) $\dfrac{a^{1/2}+a^{-1/2}}{1-a}+\dfrac{1-a^{-1/2}}{1+\sqrt{a}}$

$$\frac{a+1}{\sqrt{a}(1-a)}+\frac{\sqrt{a}-1}{\sqrt{a}1+\sqrt{a}}$$

$$= \frac{a+1+a\sqrt{a}+\sqrt{a}+\sqrt{a}-1-a\sqrt{a}+a}{\sqrt{a}1+\sqrt{a}(1-a)}$$

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

29. (3) $\dfrac{5a+3b}{4a+7b}=\dfrac{3}{4}$
    20a + 12b = 12a + 21b
    8a = 9b
    a : b = 9 : 8

30. (1) $\dfrac{x+\sqrt{x^2-1}}{x-\sqrt{x^2-1}}+\dfrac{x-\sqrt{x^2-1}}{x+\sqrt{x^2-1}}=14$

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

$$\frac{2\,2x^2-1}{1}=14$$

$$2x^2=8$$

$$x=\pm2$$

31. (1) Average runs in 15 matches = 33
Average runs in the first 10 matches = 45
So, average run in the last 5 matches

$$= \frac{33 \times 15 - 45 \times 10}{5}$$

$= 9$

32. (1)

33. (2) Present population of the City = 4840000
ATQ,
2 years ago, the population of the City

$$= 4840000 \times \left(\frac{100}{110}\right)^2$$

$= 4000000$

34. (1) P_1(↑) 20 —— 3
$P_1 + P_2$ 30 — 60 — $\frac{2}{1}$
So, the time taken by the leak to empty the full tank

$$= \frac{60}{1} = 60 \text{ minutes}$$

35. (2) ATQ,
Distance covered in half minute

$$= 84 \times 2 \times \frac{22}{7} \times \frac{3}{4}$$

$= 396$ m
So, the speed of the bus

$$= \frac{396 \times 2 \times 60}{1000} = 47.52 \text{ km/hr.}$$

36. (2) ATQ,

$$\text{Electric Bill} = \frac{54 \times 100}{18} = ₹\ 360$$

37. (3) Selling price of the machine = ₹ 6480
ATQ,
Marked price of the machine

$$= ₹\left(6480 \times \frac{100}{80} \times \frac{100}{90} \times \frac{100}{90}\right)$$

$= ₹\ 10000$

38. (1) Cost price of the article
= ₹ 937.50
So, marked price of the article

$$= ₹\left(937.50 \times \frac{100}{75} \times \frac{125}{100}\right)$$

$= ₹\ 1562.50$

39. (2) C.I for 2 years of 4% = ₹ 102
Let principal = ₹ P

$$P + 102 = P + \frac{51}{625}P$$

$P = ₹\ 1250$

$$\text{So, S.I.} = \frac{1250 \times 2 \times 4}{100}$$

$= ₹\ 100$

40. (3) P_1(↑) 17 —— 20
$P_1 + P_2$ 20 — 340 — $\frac{17}{3}$
So, the time taken by leakage to empty the tank

$$= \frac{340}{3} = 113\frac{1}{3} \text{hr}$$

41. (2) Distance between Chennai and Mumbai
= 560 km
Train A from Mumbai to Chennai starts at 6 am. at a speed of 40 km/hr, so the distance covered till 7 a.m. = 40 km
Train B from Chennai to Mumbai starts at 7 a.m. at a speed = 60 km/hr
So, trains will cross each other in

$$= \frac{560 - 40}{40 + 60} = 5\frac{1}{5} \text{hrs}$$

Distance from Mumbai when they cross each other

$$= 40 + \frac{26}{5} \times 40$$

$= 40 + 208$
$= 248$ km

42. (2) ATQ,
Inner radius of pipe

$$= \sqrt{\frac{440}{10 \times \frac{22}{7} \times 7}}$$

$= \sqrt{2}$ m

46. (2) $\Delta ABC \cong \Delta FDE$
$AB = FD = 5$ cm
$\angle A = 80°$
$\angle B = 40°$
$\angle C = \angle E = 180° - 80° - 40°$
$= 60°$

47. (3)

48. (3) Saving of family

$$= \frac{12.5}{100} \times 100000 = 12500$$

49. (3) Food

50. (1) Housing