

ANSWER SET - 40

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

EXPLANATION - 40

1. (4) $T \xrightarrow{\text{Opp}} G \xrightarrow{\text{Place Value}} 7$
 $\Rightarrow 7^2 = 49 \xrightarrow{\text{Reverse}} 94$
 Similarly,

$R \xrightarrow{\text{Opp}} I \xrightarrow{\text{Place Value}} 9$
 $\Rightarrow 9^2 = 81 \xrightarrow{\text{Reverse}} 18$

2. (4)
 3. (3) $12 : 20 :: 30 : 42$
 $\downarrow \quad \downarrow \quad \downarrow \quad \downarrow$
 $3 \times 4 \quad 4 \times 5 \quad 5 \times 6 \quad 6 \times 7$
 4. (4) Only option (4) is divisible by 3.
 5. (1) Except option (1) all are the external parts of a human body.
 6. (1) Except option (1) all the musical instruments are made from wire.

7. (2) $\frac{\text{Stone age}}{(c)} \frac{\text{Metallic Age}}{(b)}$
 $\frac{\text{Alloy age}}{(d)} \frac{\text{Atomic age}}{(a)}$

8. (2) $\underline{d}m\underline{n}n/\underline{d}m\underline{n}n/\underline{d}m\underline{n}n$
 9. (1) $2 \quad 7 \quad 14 \quad 23 \quad 34 \quad 47$
 $\begin{array}{cccccc} & +5 & & +7 & & +9 & & +11 & & +13 \\ \uparrow & & \uparrow & & \uparrow & & \uparrow & & \uparrow & & \uparrow \\ +2 & & +2 & & +2 & & +2 & & +2 & & +2 \end{array}$
 10. (3) $\begin{array}{cccccc} & +5 & & +4 & & +1 & & +5 & & +4 \\ \uparrow & & \uparrow & & \uparrow & & \uparrow & & \uparrow & & \uparrow \\ B & F & K & K & O & T & U & Y & D & F & J & O \\ \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow \\ +4 & & +0 & & +5 & & +4 & & +2 & & +5 \end{array}$
 11. (1) $463 \quad 452 \quad 439 \quad 424 \quad 407$
 $\begin{array}{cccccc} & -11 & & -13 & & -15 & & -17 \\ \uparrow & & \uparrow & & \uparrow & & \uparrow & & \uparrow \\ -2 & & -2 & & -2 & & -2 & & -2 \end{array}$

12. (3) C O U N T E R
 13. (3) EARTHQUAKE

$\xrightarrow{\text{Reverse}} \text{EKAUQHTRAE}$
 Similarly,
 ELECTORATE
 $\xrightarrow{\text{Reverse}} \text{ETAROTCELE}$

14. (4) $(90 - 40) \times 3 = 150$
 $(100 - 60) \times 3 = 120$

Similarly,
 $(110 - 80) \times 3 = 90$

15. (1) $(6 \times 5) - 4 = 26 \Rightarrow 62$
 $(4 \times 7) - 4 = 24 \Rightarrow 42$
 $(8 \times 5) - 4 = 36 = 63$

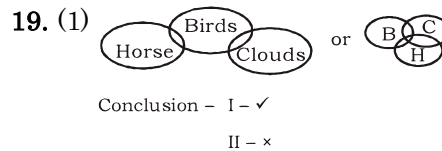
Similarly,

16. (2)

17. (4) $\frac{\text{Immigrate}}{(B)} \frac{\text{Immutable}}{(A)}$

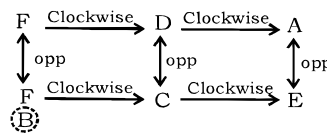
$\frac{\text{Impassioned}}{(D)} \frac{\text{Imperative}}{(C)}$

18. (1) $1 * 2 \Rightarrow (1 + 2) - (1 \times 2) = 1$
 $2 * 3 = (2 + 3) - (2 \times 3) = -1$
 $3 * 4 = (3 + 4) - (3 \times 4) = -5$
 Similarly,
 $7 * 9 = (7 + 9) - (7 \times 9) = -47$

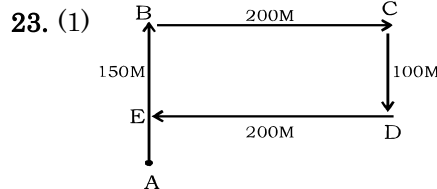


20. (4)

21. (3) According to dice I and II

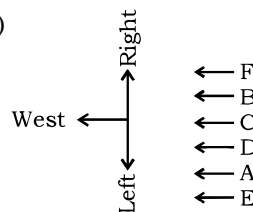


22. (4)

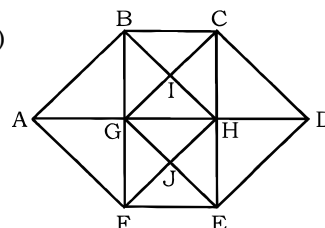


$AE = AB - BE \text{ (BE = CD)}$
 $= 150 \text{ M} - 100 \text{ M}$
 $= 50 \text{ M}$

24. (2)



25. (3)



There are 28 triangles are in the given figure - ABG, AFG, CDH, DEH, BGI, BCI, CHI, GHI, GHJ,

EHJ, EFJ, FGJ, ABF, CDE, BCG, CBH, CGH, BGH, EGH, EEF, EFG, FGH, ABH, AFH, CDG, EDG, BFH and CGE.

26. (3) Difference between given numbers
 $= 95336 - 91545$
 $= 3791$
 $= 17 \times 223$

$95336 = 223 \times 427 + 115$
 So, the number and remainder are 223 and 115 respectively.

27. (2) Average per day income of A, B and C
 $= ₹ 450$

Average per day income of A and B = ₹ 400

Average per day income of B and C = ₹ 430

So, per day income of B
 $= 2 \times 430 + 2 \times 400 - 3 \times 450$

$= 860 + 800 - 1350$
 $= ₹ 310$

28. (3) Total number of students = 660
 Ratio between boys and girls = 13 : 9

The number of boys

$= \frac{13}{22} \times 660 = 390$

The number of girls

$= \frac{9}{22} \times 660 = 270$

30 new girls take admission, then total number of girls = 270 + 30 = 300

New ratio of boys and girls = 6 : 5

So, the number of boys

$= \frac{6}{5} \times 300 = 360$

Then, the number of boys who left the school
 $= 390 - 360 = 30$

29. (4) ATQ,

$(30 + 3)$ i.e. 33% of salary = ₹ 2310

So, total salary = $\left(\frac{2310}{33} \times 100 \right)$
 $= ₹ 7000$

30. (4) CP Profit Profit percent

(I) 36 17 $\frac{17}{36} \times 100 = 47.22\%$

(II) 50 24 $\frac{24}{50} \times 100 = 48\%$

(III) 40 19 $\frac{19}{40} \times 100 = 47.5\%$

(IV) 60 29 $\frac{29}{60} \times 100 = 48.33\%$

31. (3) S.P. of house = ₹ 1 lakh

Loss percent = 20%

C.P. of house = ₹ $\frac{5}{4}$ lakh

S.P. of shop = ₹ 1 lakh

Profit percent = 20%

C.P. of house = ₹ $\frac{5}{6}$ lakh

Total C.P. = $\left(\frac{5}{6} + \frac{5}{4}\right) = \frac{25}{12}$ lakh

Total S.P. = 1 + 1 = 2 lakh

Loss = $\left(\frac{25}{12} - 2\right) = \frac{1}{12}$ lakh

32. (2) Let principal = ₹ p

So, simple interest = ₹ $\frac{4}{9}$ p

Let rate of interest = r %

So, time will be = r years

ATQ,

$$\frac{4}{9}p = \frac{p \times r \times r}{100}$$

$$r^2 = \frac{400}{9}$$

$$r = \frac{20}{3} = 6\frac{2}{3}\%$$

33. (3) Principal = ₹ 30,000

Compound interest = ₹ 4347

So, amount = ₹ (30,000 + 4347) = 34347

Rate of interest = 7%

ATQ,

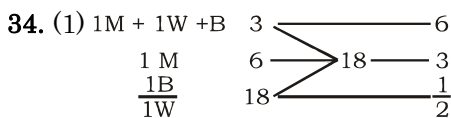
$$34347 = 30000 \times \left(1 + \frac{7}{100}\right)^T$$

$$\frac{34347}{30000} = \left(\frac{107}{100}\right)^T$$

$$\frac{11449}{10000} = \left(\frac{107}{100}\right)^T$$

$$\left(\frac{107}{100}\right)^T = \frac{11449}{10000} = \left(\frac{107}{100}\right)^2$$

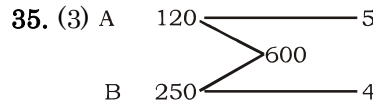
T = 2 years



Work done by a woman = 2 units

So, time taken to complete the

work = $\frac{18}{2} = 9$ days



Let total units of work = 600 units

Units of work done by A and B in

20 days

$$= (5 + 4) \times 20$$

$$= 180 \text{ units}$$

Units of work done by A in 12 days

$$= 12 \times 5 = 60 \text{ units}$$

$$\text{Remaining units of work} = 600 - 180 - 60$$

$$= 360 \text{ units}$$

Work finished by A and C = 48 days

Units of work done by A and C per day

$$= \frac{360}{48} = 7.5 \text{ units}$$

Units of work done by C alone = 7.5 - 5

$$= 2.5 \text{ units}$$

So, C can complete the work in

$$= \frac{600}{2.5} = 240 \text{ days}$$

36. (3) Distance between A and B = 330 km

ATQ,

Distance travelled by first train till 9 a.m

$$= 60 \text{ km}$$

Remaining distance = 330 - 60 = 270 km

Related speed = 60 + 75 = 135 km/hr

Time required to meet

$$= \frac{270}{135} = 2 \text{ hours}$$

So, trains will meet at 11 a.m.

37. (1) Total distance = (600 + 800 + 500 + 100) km

$$= 2000 \text{ km}$$

Total time

$$= \left(\frac{600}{80} + \frac{800}{40} + \frac{500}{400} + \frac{100}{50}\right) \text{ hours}$$

$$= (7.5 + 20 + 1.25 + 2) \text{ hours}$$

$$= 30.75 \text{ hours} = \frac{123}{4} \text{ hours}$$

Average speed

$$= 2000 \times \frac{4}{123} = \frac{8000}{123}$$

$$= 65\frac{5}{123} \text{ km/hr}$$

38. (3) 1 + 10 + 102 + + upto n

$$\text{terms} = \frac{10^n - 1}{9} \text{ (given)}$$

4 + 44 + 444 + upto n terms

$$= \frac{4}{9} [9 + 99 + 999 + \dots \text{ upto } n \text{ terms}]$$

$$= \frac{4}{9} [(10 - 1) + (100 - 1) + (1000 - 1) + \dots \text{ upto } n \text{ terms}]$$

$$= \frac{4}{9} [10 + 100 + 1000 + \dots \text{ upto } n \text{ terms} - n]$$

$$= \frac{4}{9} [10(1 + 10 + 10^2 + \dots \text{ upto } n \text{ terms}) - n]$$

$$= \frac{40}{9} \times \frac{10^n - 1}{9} - \frac{4n}{9}$$

$$= \frac{40}{81} \times (10^n - 1) - \frac{4n}{9}$$

39. (2) $\sqrt[3]{20 + 14\sqrt{2}}$

$$= \sqrt[3]{8 + 12 + 2\sqrt{2} + 12\sqrt{2}}$$

$$= \sqrt[3]{8 + 2\sqrt{2} + 12\sqrt{2} + 12}$$

$$\sqrt[3]{(2)^3 + (\sqrt{2})^3 + 3 \times (2)^2 \times \sqrt{2} + 3 \times 2 \times (\sqrt{2})^2}$$

$$= \sqrt[3]{(2 + \sqrt{2})^3} = 2 + \sqrt{2}$$

Similarly,

$$\sqrt[3]{20 - 14\sqrt{2}} = 2 - \sqrt{2}$$

So,

$$\sqrt[3]{20 + 14\sqrt{2}} + \sqrt[3]{20 - 14\sqrt{2}}$$

$$= 2 + \sqrt{2} + 2 - \sqrt{2} = 4$$

40. (4) $\frac{4^{10+n} \cdot 16^{3n-4}}{4^{7n}} = 4^{10+n} \cdot 4^{6n-8} \cdot 4^{-7n}$

$$= 4^{10+n+6n-8-7n}$$

$$= 4^2 = 16$$

41. (3) $\sin \theta + \sin 2\theta = 1$

$$\sin \theta = 1 - \sin 2\theta = \cos 2\theta$$

$$\cos 12\theta + 3\cos 10\theta + 3\cos 8\theta + \cos 6\theta - 1$$

$$\text{Putting } \cos 2\theta = \sin \theta$$

$$= \sin 6\theta + 3\sin 5\theta + 3\sin 4\theta + \sin 3\theta - 1$$

$$= \sin 4\theta (\sin 2\theta + \sin \theta) + 2\sin 3\theta (\sin 2\theta + \sin \theta) + \sin 2\theta (\sin 2\theta + \sin \theta) - 1$$

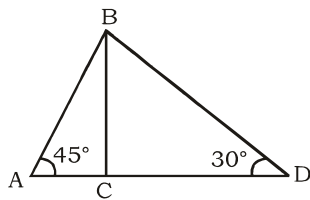
$$= \sin 4\theta + 2\sin 3\theta + \sin 2\theta - 1$$

$$= \sin 2\theta (\sin 2\theta + \sin \theta) + \sin \theta (\sin 2\theta + \sin \theta) - 1$$

$$= \sin 2\theta + \sin \theta - 1$$

$$= 1 - 1 = 0$$

42. (2)



Height of bridge (BC) = 2.5 m

In $\triangle ABC$

$$\frac{AC}{BC} = \cot 45^\circ \Rightarrow AC = 2.5 \text{ m}$$

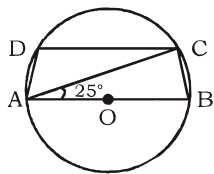
In $\triangle BCD$

$$\frac{CD}{BD} = \cot 30^\circ \Rightarrow CD = 2.5\sqrt{3}$$

$$= 4.33 \text{ m}$$

So, width of river = $2.5 + 4.33 = 6.83 \text{ m}$

43. (2)



In $\triangle ABC$,

$$\angle CAB = 25^\circ$$

$$\angle BCA = 90^\circ$$

$$\angle ACD = 25^\circ \text{ (opposite angle)}$$

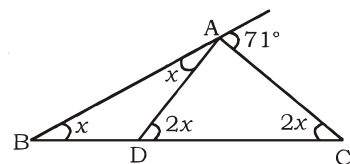
In parallelogram ABCD,

$$\angle BCD + \angle DAB = 180^\circ$$

$$25^\circ + 90^\circ + 25^\circ + \angle CAD = 180^\circ$$

$$\angle CAD = 180^\circ - 25^\circ - 90^\circ - 25^\circ = 40^\circ$$

44. (2)



In $\triangle ABD$

$$\text{Let } \angle ABD = x^\circ$$

$$AD = BD$$

$$\text{So, } \angle DAB = x^\circ$$

ATQ,

$$2x^\circ + 2x^\circ = x^\circ + 71$$

$$4x^\circ - x^\circ = 71$$

$$3x^\circ = 71$$

$$x^\circ = \frac{71}{3}$$

$$\text{So, } \angle ACD = 2 \times \frac{72^\circ}{3} = \frac{142^\circ}{3}$$

45. (2) Difference between curved

surface area and total surface

$$\text{area} = \text{Area of base}$$

$$= \pi \times 21 \times 21$$

$$= 441 \pi \text{ cm}^2$$

46. (1) ATQ,

$$\text{The area of square field} = \frac{1440}{160}$$

$$= 9 \text{ hectare}$$

$$= 90000 \text{ cm}^2$$

The side of square field

$$= \sqrt{90000} = 300 \text{ cm}$$

The cost of fence = ₹ 7.50/m

So, the cost of pitting a fence =

$$300 \times 7.5 \times 4$$

$$= ₹ 9000$$

47. (4) The area of floor = 346.5 m^2

So, its radius

$$= \sqrt{346.5 \times \frac{7}{22}} = 10.5 \text{ m}$$

The area of canvas = $\pi r l$

$$= \frac{22}{7} \times 10.5 \times \sqrt{(10.5)^2 + (14)^2}$$

$$= \frac{22}{7} \times 10.5 \times 17.5 = 577.5 \text{ m}^2$$

So, the length of canvas required

$$= \frac{577.5}{1.2} = 481.25 \text{ m}$$

48. (2) Required percentage

$$= \frac{35}{110} \times 100 = 31.8181\%$$

$$\cong 32\%$$

49. (4) Required ratio = 70 : 40

$$= 7 : 4$$

50. (4) Required ratio = 50 : 75

$$= 2 : 3$$

76. (4) Replace 'to' by 'with'.

77. (4) Replace 'am seeing' by 'can see'.

'See, Hear, Feel, Smell, Taste' - when these verbs refer to perception, we do not normally use progressive forms. To talk about seeing, hearing etc at a particular moment, we often use can see, can hear etc.

Ex. Can you hear somebody coming up the stairs?

NOT 'Are you hearing somebody coming up the stairs?'

88. (4) 'to' should be filled in the blank as 'to' is the preposition used with 'kind'.

89. (2) 'with' should be filled in the blank as the expression 'blue with cold' means 'extremely cold'.

91. (2) 'Persisted in convincing' should replace the underlined part in order to improve the sentence. The verb 'persist' takes the preposition 'in' with it.

92. (3) 'that are being looked into' should replace the underlined part in order to improve the sentence.

'To look into' means 'to try to find out about something'. 'To look after' means 'to take care of someone or something'.

93. (1) 'the bird teased the hunter' should replace the underlined part, as no other option is grammatically correct or logical.