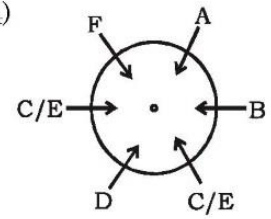
ANSWER SET - 06

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

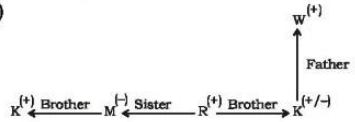
EXPLANATION - 06

1. (4)

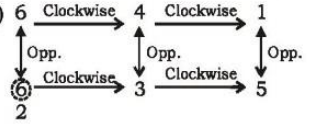


2. (3) Days between 1st February, 1920 to 5
March, 1920 = 28 days + 5 days
= 33 days
Odd days = 33 ÷ 7 = 5 (Remainder)
So, the day on 5th March = Thursday + 5th
= Tuesday

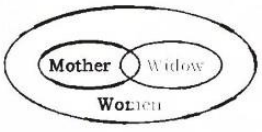
3. (4)



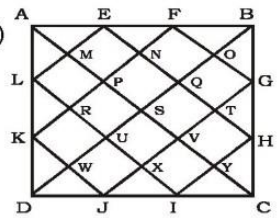
4. (4)



5. (4)



6. (4)



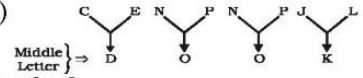
There are 36 triangles are in the above figure – ABD, ABC, BDC, ADC, AFK, LDI, JCG, BEH, AML, LRK, KWD, DWJ, JXI, IYC, CYH, HTG, ASD, DSC, BSC, BSA, GOB, BOF, FNE, EMA, CVG, HQB, BQE, FPA, ALE, KDJ, HIC, BFG, APK, LUD, DUI and JVC.

7. (4) $18 \times 12 \div 4 + 5 - 6$
$18 \times 3 + 5 - 6$
$54 + 5 - 6$
$= 59 - 6 = 53$

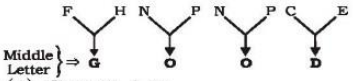
8. (2) a a **b** b c c/**a** a b **b** c c/**a** a **b** b c **c**

9. (2) $\frac{\text{SELDOM}}{2}$ $\frac{\text{SELECT}}{1}$
$\frac{\text{SELFISH}}{4}$ $\frac{\text{SELLER}}{5}$ $\frac{\text{SEND}}{3}$

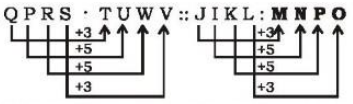
10. (3)



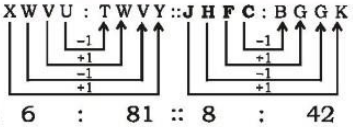
Similarly,



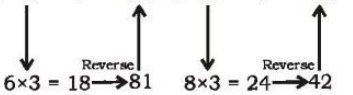
11. (4) G R E A T
12. (3) G O O D
13. (3) Q P R S : T U W V :: J I K L : **M N P O**



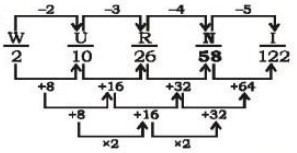
14. (4) XWVU : TWVY :: **J H F C** : B G G K



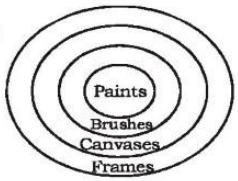
15. (1) 6 : 81 :: 8 : 42



16. (2)
17. (4) Except option (4), all are divisible by 10.
18. (3) 9, 19, 39, 79, 159, **319**
+10, +20, +40, +80, +160
×2, ×2, ×2, ×2
19. (3)



20. (4) 46080, 3840, 384, 48, **8**, 2, I
+12, +10, +8, +6, +4, +2
21. (1) $3 \times 3 = 9 \Rightarrow 9 \times 3 = 27$A
$2 \times 2 = 4 \Rightarrow 4 \times 2 = 8$C
$4 \times 4 = 16 \Rightarrow 16 \times 4 = 64$C
22. (3) 6 + 5 = 11; 11 + 7 = 18 ;
18 + 9 = 27; 27 + 11 = 38 ;
38 + 13 = **51**; 51 + 15 = 66 ;
66 + 17 = 83
23. (4)
24. (2)
25. (3)



Conclusions = I – √
= II – √

26. (2) Radius of the hemisphere = Radius of the base of the cone = r
Height of the hemisphere = Height of the cone = h = r
Ratio of their curved surface areas
$2\pi r^2 : \pi rl$
$= 2\pi r^2 : \pi r\sqrt{r^2 + r^2}$
$= \sqrt{2} : 1$

27. (3) HCF = 12 , LCM = 924
$\frac{\text{LCM}}{\text{HCF}} = \frac{924}{12} = 77$
So, possible numbers
$= (12 \times 1, 12 \times 77)$
or $(12 \times 7, 12 \times 11)$
So, possible number of pairs = 2

28. (3) $x = \sqrt{\frac{\sqrt{5}+1}{\sqrt{5}-1}}$
$= \sqrt{\frac{\sqrt{5}+1}{\sqrt{5}-1} \times \frac{\sqrt{5}+1}{\sqrt{5}+1}}$
$= \sqrt{\frac{\left(\sqrt{5}+1\right)^2}{5-1}}$
$= \frac{\sqrt{5}+1}{2}$
now, $5x^2 - 5x - 1 = 5\left(\frac{\sqrt{5}+1}{2}\right)^2 - 5\left(\frac{\sqrt{5}+1}{2}\right) - 1$
$= \frac{1}{4}\left[5\left(5+1+2\sqrt{5}\right) - 10\left(\sqrt{5}+1\right) - 4\right]$
$= \frac{1}{4}\left[30 + 10\sqrt{5} - 10\sqrt{5} - 10 - 4\right]$
$= 4$

29. (1) Unit place of 233 is 2. So when number is divided by 10, then remainder will be

30. (2) $\frac{6}{7}$ th of speed delayed is = 12 minutes
So, usual time taken $= \frac{12 \times 6}{(7-6)}$
= 72 minutes
$= 1\frac{1}{5}$ hours

31. (2) Reduced price of apples per dozen $= \left(54\frac{20}{100} \times \frac{1}{10}\right) \times 12$
= ₹ 12.96

32. (2) ATQ
Reduction in consumption
$= 100 - \frac{100 \times 100}{100\ 60}$
$= 100 - 62.5 = 37.5\%$

33. (2) Ratio of copper; zinc and nickel= 5 : 3 : 2
Required ratio of copper, zinc and nickel = 5 : 3 : 3
Original quantity of alloy = 100 kg
So,

Quantity of nickel that must be added

$$= \frac{3-2}{5+3+2} \times 100$$

$= 10$ kg

34. (3) ATQ,

$AE \times EB = CE \times ED$

$4.5 \times EB = 3 \times 6$

$EB = 4$ cm

35. (1) $\frac{3-4\sin^2\theta}{\cos^2\theta} = \frac{3\sin^2+3\cos^2\theta-4\sin^2\theta}{\cos^2\theta}$

$= 3 - \tan^2\theta$

36. (1) $\frac{\tan\theta}{\sec\theta-1} + \frac{\tan\theta}{\sec\theta+1} = 4$

$$\frac{\tan\theta(\sec\theta+1+\sec\theta-1)}{\sec^2\theta-1} = 4$$

$$\frac{\tan\theta(2\sec\theta)}{\tan^2\theta} = 4$$

$$\frac{2\cos\theta}{\sin\theta\cos\theta} = 4$$

$$\sin\theta = \frac{1}{2}\sin 30°$$

$\theta = 30°$

37. (3) Circumference of the base of the cylinder = 110 cm

Radius of the cylinder

$$= \frac{110\times7}{2\times22} = \frac{35}{2}\text{cm}$$

Curved surface area of the cylinder

$= (2\pi rh)$

$= 4400$ cm^2

Volume of the cylinder (πr^2h)

$$= \frac{4400}{2} \times \frac{35}{2}$$

$= 38500$ cm^3

38. (2) Area of base of cone (πr^2)

$= 36\ \pi$ cm^2

$$\text{Radius of base} = \sqrt{\frac{36\pi}{\pi}} = 6\text{cm}$$

Curved surface area (πrl) = 396

$$\text{Slant Height (l)} = \frac{396\times7}{6\times22}$$

39. (1)

Speed		Time	Delay/Early Time
5		6	+7
	30		
6		5	−5
		1 hours	+12 minutes

If 1 hour i.e. 60 minutes difference is there, then distance between my house and station = 30 km

Actually 12 minutes difference is there, then distance between my house and station

$$= \frac{30}{60} \times 12 = 6 \text{ km}$$

40. (3)

A	9		4
		36	
B	12		3
			7

Let total unis of work = 36 units

Units of work done in 2 days = 7 units

Units of work done in 10 days = 35 units

So, rest of work will be completed in

$$= 36 - 35 = \frac{1}{4}$$

Total time taken to complete the work

$$= 10\frac{1}{4} \text{ days}$$

41. (1) Let A can do the work in = x days

So, work done by B

$$= \frac{x}{2} \times \frac{4}{3} = \frac{2}{3}\text{x days}$$

x			2
		2x	
$\frac{2}{3}$x			$\frac{3}{5}$

ATQ,

$$\frac{2x}{5} = 18$$

x = 45 days

So, time taken by B to complete the work

$$= 45 \times \frac{2}{3} = 30 \text{ days}$$

42. (2) Tan 7°.tan 23°. tan60°. tan67°. tan83°

= (tan 7°.tan 83°).(tan 23°.tan 67°)tan 60°

$= 1 \times 1 \times \sqrt{3} = \sqrt{3}$

43. (1) Let M.R.P. = ₹ 100

Discount = 23%

So, selling price = ₹ 77

Profit = 10%

$$\text{So, Profit} = \frac{77\times100}{100} = ₹\ 7$$

If profit is ₹ 7 then M.R.P

= ₹ 100

Actual profit is ₹ 56 then M.R.P.

$$= ₹\left(\frac{56}{7} \times 100\right)$$

= ₹ 800

44. (3) ATQ,

$$\text{S.I. on ₹ 800 of 4\%} = \frac{800\times4\times3}{100}$$

₹ 96

So, final amount after 3 years will be

= ₹ (956 + 96)

= ₹ 1052

45. (1) 8 oranges were bought at = ₹ 34

So, 12 organges were bought at

$$= ₹\left(34 \times \frac{12}{8}\right)$$

= ₹ 51

12 oranges were sold at = ₹ 57

Profit earned = ₹ (57 − 51) = ₹ 6

ATQ,

Oranges should be sold to earn a profit of ₹ 45

$$= \frac{12}{6} \times 45$$

= 90 oranges

46. (2) The new average

$$= \frac{25\times12+73-48}{25}$$

= 14

47. (3) $x^2 - 4x + 5 = 0$

$$x + \frac{5}{x} - 4 = 0$$

$$x^2 + \frac{25}{x^2} + 2.x.\frac{5}{x} = 16$$

$$x^2 + \frac{25}{x^2} = 16 - 10 = 6$$

48. (2) State B has highest production i.e. 241 lakhs tonnes.

49. (1) Required ratio = 390 : 325

= 6 : 5

50. (4) Required percentage

$$= \frac{103}{325} \times 100 = 31\%$$