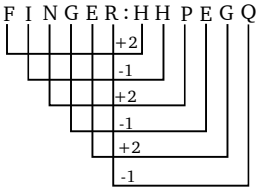
ANSWER-KEY

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

SOLUTIONS SSC MOCK 1

1. **(c)** As Kathak is a Dance, Same as Elegy is a poem.

2. **(c)**



3. **(a)** $4^2 + 4 = 20$
$6^2 + 6 = 42$

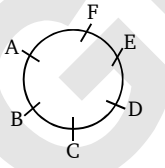
4. **(d)** Block smith is different from others

5. **(a)**
$$117 - 143 = 26$$
$$142 - 156 = 14$$
$$64 - 78 = 14$$
$$155 - 169 = 14$$

6. **(d)**
$$1 + 2 + 3(6)^2 = 36$$
$$2 + 2 + 1 = (5)^2 = 25$$

7. **(c)**
$\underset{\div 2}{48} \quad \underset{\div 2}{24} \quad 12$

8. **(b)**

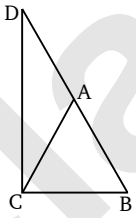


9. **(b)**
Powerful → Powerhouse → Powerless → Powerplant

10. **(b)**
Daily → Weekly → Fortnight → Monthly → Bimonthly

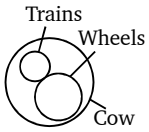
11. **(a)**
F 3 M — F is the wife of M.
M 5 K — M is the father of K.
'F' is the mother of K = F 3 M 5 K

12. **(b)**



13. **(a)** Only Assumption I is implicit.

14. **(d)**



15. **(d)**

16. **(c)**
$$15 - 13 = (2)^3 = 8$$
$$23 - 18 = (5)^3 = 125$$

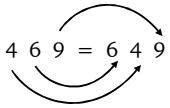
17. **(d)**
$$7 \times 2 = 14$$
$$9 \times 2 = 18$$

18. **(a)**
2 February — Thusday
25 March — Sunday

19. **(b)** HAMPER

20. **(c)**
$24 + 6 \times 3 \div 3 - 1$
$24 \div 6 \times 3 + 3 - 1$
$4 \times 3 + 3 - 1$
$12 + 3 - 1$
$15 - 1 = 14$

21. **(d)**



22. (a) The sum of opposite side of a standard dice is 7.
$6 + 1 = 7$
$5 + 2 = 7$
$4 + 3 = 7$

23. (c)
10^{th} Right + 8^{th} Left = 18 left
and We know 18^{th} from the left is R.

24. (c)

25. (a)
L = 75, A = 21, M = 13, B = 45

26.(c) 27.(c) 28.(a) 29.(c) 30.(a) 31.(c) 32.(b) 33.(a) 34.(b) 35. (a) 36.(b) 37.(b) 38.(a) 39.(c) 40.(a) 41.(b)

42.(d) 43.(a) 44.(b) 45.(b) 46.(a) 47.(b) 48.(d) 49.(a)

50.(b)

51. (b)

$$ay + bx = mxy \quad \text{..... (i)}$$
$$by + ax = nxy \quad \text{..... (ii)}$$

From Eqn (i) and (ii)

$$by + ax = n\frac{(ay + bx)}{m}$$

$mby + max = nay + nbx$

$max - nbx = nay - mby$

$$\frac{x}{y} = \frac{(na - mb)}{(ma - nb)}$$

52. (a)

$$\frac{\sin^2 A}{\sin^2 B} = p^2 \Rightarrow 1 - \frac{\sin^2 A}{\sin^2 B} = 1 - p^2 \quad \text{.....}(i)$$

$$\frac{\cos^2 A}{\cos^2 B} = q^2 \Rightarrow \frac{\cos^2 A}{\cos^2 B} - 1 = q^2 - 1 \text{..... (ii)}$$

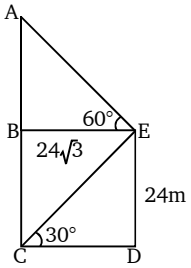
From eqn (1) and (2)

$$\frac{q^2 - 1}{1 - p^2} = \frac{\cos^2 A - \cos^2 B}{\cos^2 B} \times \frac{\sin^2 B}{\sin^2 B - \sin^2 B}$$

$$\frac{q^2 - 1}{1 - p^2} = \tan^2 B = \frac{\sin^2 B}{\cos^2 B}$$

$$\tan B = \pm\sqrt{\frac{q^2 - 1}{1 - p^2}}$$

53. (d)



in ΔEDC

$$\tan 30° = \frac{ED}{CD}$$

$CD = 24\sqrt{3}$ m

in ΔABE

$$\tan 60° = \frac{AB}{BE}$$

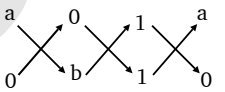
AB = 72 m

Required ratio $\frac{AC}{CD} = \frac{96}{24\sqrt{3}} = \frac{4}{\sqrt{3}}$

54. (b) Let original salary is Rs. 100

Required % $= \frac{20}{120} \times 100 = \frac{50}{3}\%$

55. (b) If points are collinear then area will be 0



$(ab + 0 + 0) - (0 + b + a) = 0$

$ab = a + b$

$$\frac{1}{a} + \frac{1}{b} = 1$$

56. (c)

SI	400	400	
CI	400	400	100

$$\text{Rate} = \frac{100 \times \text{SI}}{\text{Principal} \times \text{time}} = \frac{100 \times 100}{400 \times 1}$$

Rate = 25%

$$\text{Principal} = \frac{100 \times 800}{25 \times 2} = \text{Rs. } 1600$$

57. (b)

$$\frac{\pi}{3}a^2 = 48\pi$$

$a = 12$ units

Perimeter of triangle = 3 a = 36 units

58. (a) Let income of man is Rs. 100

Required increase % = $\frac{12}{20} \times 100 = 60\%$

59. (b) Let their age is x year and 4x years
ATQ,

$x \times 4x = 196$

$x = 7$ years

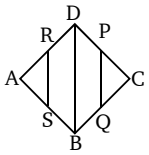
Required ratio $= 12 : 33$

$= 4 : 11$

60. (c)

X		Y		Z
3	:	1		
		2	:	3
6	:	2	:	3

61. (a)



$\Delta ASR \sim \Delta ABD$

$\frac{SR}{BD} = \frac{1}{2}$

$\Delta CQP \sim \Delta CBD$

$\frac{QP}{BD} = \frac{1}{2}$

SC : QP

1 : 1

62. (d)
For any equation the roots will be equal it
D = 0

$b^2 - 4ac = 0$

from the equation

$(1+n^2)\,x^2 + 2ncx + (c^2 - a^2) = 0$

$(2nc)^2 - 4x(1+n^2)(c^2 - a^2) = 0$

$4\,n^2c^2 - (4+4n^2)(c^2 - a^2) = 0$

$4n^2c^2 - 4c^2 - 4c^2n^2 + 4a^2 + 4n^2a^2 = 0$

$4a^2 + 4n^2a^2 - 4c^2 = 0$

$a^2(1+n^2) = c^2$

63. (c)

Time $= \frac{200+200}{(20+30)} \times \frac{18}{5} = 28.8$ sec

64. (b)

$m - \frac{1}{m} = \frac{1}{3}$

Multiply both sides by 3

$3m - \frac{3}{m} = 1$

$9m^2 + \frac{9}{m^2} - 2(3m)\left(\frac{3}{m}\right) = 1$

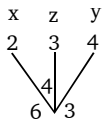
$9m^2 + \frac{9}{m^2} = 19$

65. (a) ATQ,

$n \times 20 = (n+50) \times 16$

$n = 200$

66. (b)



y's share $= \frac{4}{13} \times 3900$

$=$ Rs. 1200

67. (b)
Let each equal side = 5x cm and base = 3x cm
then, 5x + 5x + 3x = 78
x = 6
Length of base = 3 × 6 = 18 cm

68. (d)
Percentage of interest 4 year
$4 \times 20\%$ $6 \times 400\%$ $4 \times 8000\%$ $1 \times 16000\%$
$= 111360000\%$

69. (b)

Additional milk $= \frac{38}{95\%} \times 5\% = 2$ litres

70. (a)
Let the number of Rs. 1, 50 paise and 10 paise coins are 3x, 8x and 10x
then, $3x\,\frac{8x}{2} + \frac{10x}{10} = 112$
x = 14
No. of 50 paise coins = 8×14=112

71. (d)

A : B : C $= \frac{1}{2} : \frac{1}{3} : \frac{1}{4} = 6 : 4 : 3$

A's share $= \frac{2600}{13} \times 6 =$ Rs. 1200

72. (c)

$\tan q = \frac{1-\cos p}{\sin p} = \frac{2\sin^2\frac{p}{2}}{2\sin\frac{p}{2}\cos\frac{p}{2}} = \tan\frac{p}{2}$

$q = \frac{p}{2}$

Now, $\frac{2\tan q}{1-\tan^2 q} = \frac{2\tan\frac{p}{2}}{1-\tan^2\frac{p}{2}} = \tan p$

73. (b)

A	:	B	:	C
120	:	100	:	150

then divided all vessel

Milk	:	Water

$A \rightarrow 72 : 48$

$B \rightarrow 70 : 30$

$C \rightarrow \frac{110}{252} : \frac{40}{118}$

$126 : 59$

74. (b)

$\%$ expenditure on paper $= \frac{126^\circ}{360^\circ} \times 100 = 35\%$

Required change $\% = 35 \times \frac{90}{100} = 31.5\%$

$= 35 \times \frac{110}{100} = 38.5\%$

75. (c)

Total expenditure $= \frac{14625}{9^\circ} \times 360^\circ = \text{Rs } 585000$

Total SP $= \frac{585000}{100} \times 120 = \text{Rs. } 702000$

MP of each copy $= \frac{702000}{12000} = \text{Rs. } 58.50$

76.(d) 77.(b) 78.(c) 79.(c) 80.(b) 81.(a) 82.(d)
83.(b) 84.(a) 85.(a) 86.(d) 87.(b) 88.(c) 89.(c)
90.(c) 91.(d) 92.(d) 93.(b) 94.(a) 95.(b) 96.(a)
97.(a) 98.(c) 99.(d) 100 .(c)