SSC CHSL - CHT1 : 180238 GRAND TEST HINTS AND SOLUTIONS

ANSWER KEY

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

1. (2) The position of Y from the right end of the English alphabetical series is 2 and that of V is 5.
$(2)^2 = 4$ and $(5)^2 = 25$.

2. (1) F $\xrightarrow{-1}$ Q, R $\xrightarrow{-1}$ E; W $\xrightarrow{-1}$ H, I $\xrightarrow{-1}$ V; I $\xrightarrow{-1}$ H; D $\xrightarrow{-1}$ C; N $\xrightarrow{-1}$ M; E $\xrightarrow{-1}$ D; G $\xrightarrow{-1}$ D, E $\xrightarrow{-1}$ F; L $\xrightarrow{-1}$ X, Y $\xrightarrow{-1}$ K

3. (3) A purse is used to hold money and an urn is used to hold ashes.

4. (4) Ecstasy is opposite of Gloom, Similarly, Humiliation is opposite of exaltation.

5. (4) 4913 is a perfect cube whereas rest are perfect square.

6. (4) All except Agra are cities situated on the banks of river Ganga.

7. (4) Except Bristol, all others are cities of Switzerland. Berne is the capital of Switzerland.

8. (3) 36 – 2 = 34
34 – 4 = 30
30 – 2 = 28
28 – 4 = 24
24 – 2 = 22

9. (3)

10. (3) First Column $(2 \times 4) + (4 \times 6)$
$\Rightarrow 8 + 24 = 32$
Second Column $(3 \times 5) + (5 \times 7)$
$\Rightarrow 15 + 35 = 50$
Third Column $(8 \times 10) + (10 \times 12)$
$\Rightarrow 80 + 120 = 200$.

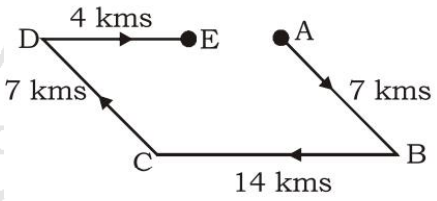
11. (2) ac[a]c / ab[a]b / aca[c] / aba[b] / aca[c]

12. (1)

13. (4)

14. (4) None of the assumptions is implicit in the statement. The statement implies that industrious people are rich.

15. (3)

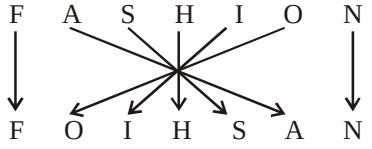


Required distance = AE = 14 – 4 = 10 kms

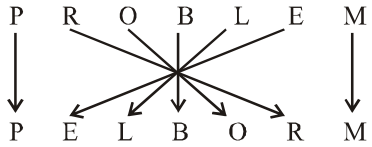
16. (4) 'Migen' means 'Cup'; 'Lasan' means 'Board'; 'Poen' means 'Walk'; 'Cuop' means 'Pull'; and 'Dansa' means 'Man'.
The only possible choices left are choices a and d. Choice a can be ruled out because migen means 'Cup'. So, (4) is the right option.

17. (4) B R [O W] N / B [R] O [W] N / B

18. (3)



Similarly,



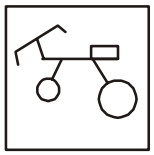
19. (4) There are no 'C' and 'O' letters in the given word. Therefor word DOCTOR cannot be formed.

S U P E R INTEN D E N T ⇒ I N T E N S E

SU P ER I N T E N D E N T ⇒ N U R S E

S U P E R I N T EN DENT ⇒ D E N T I S T

20. (1) Arrangement of words as per dictionary :
3. Conscience
↓
2. Consciousness
↓
5. Consequence
↓
4. Conservation
↓
1. Consume

21. (2) 

22. (3)

23. (4) In question figure, one of the dots lies in the region common to the circle and the square only, another dot lies in the region common to the square, the triangle and the rectangle only and the third dot lies in the region common to the triangle and the rectangle only. In each of the figures (A), (B) and (C) there is no region common to the square, the triangle and the rectangle only. Only figure (D) consists of all the three types of regions.

24. (4) 

25. (2) 

51. (1) Let one number is x.
According to the questions,
x + y = 40
xy = 375

$$\Rightarrow \frac{1}{x}+\frac{1}{y}=\frac{y+x}{xy}=\frac{40}{375}=\frac{8}{75}$$

52. (4) Part of the tank filled by both pipes in two hours

$$=2\left(\frac{1}{8}+\frac{1}{6}\right)=2\left(\frac{3+4}{24}\right)=\frac{7}{12}$$

Remaining part = $1-\frac{7}{12}=\frac{5}{12}$

Time taken by B in filling the remaining part

$$=\frac{5}{12}\times 6=\frac{5}{2}=2\frac{1}{2} \text{ hours}$$

53. (2) $0.7+\sqrt{0.16}=1.1$

$1.02-\frac{0.6}{24}=0.995$

$1.2\times 0.83=0.996$

$\sqrt{1.44}=1.2$

54. (4) xy + yz + zx = 0
∴ xy + zx = –yz
⇒ xy + yz = – zx
⇒ yz + zx = –xy

$$\therefore \frac{1}{x^2-yz}+\frac{1}{y^2-zx}+\frac{1}{z^2-xy}$$

Putting value of –yz, –zx, –xy from above

$$=\frac{1}{x^2+(xy+zx)}+\frac{1}{y^2+(xy+yz)}+\frac{1}{z^2+(yz+zx)}$$

$$=\frac{1}{x(x+y+z)}+\frac{1}{y(x+y+z)}+\frac{1}{z(x+y+z)}$$

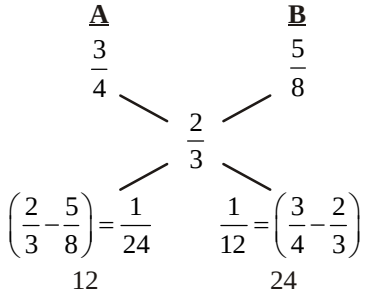
$$=\frac{1}{x+y+z}\left(\frac{1}{x}+\frac{1}{y}+\frac{1}{z}\right)$$

$$=\frac{1}{x+y+z}\left(\frac{zy+xz+xy}{xyz}\right)=\frac{1}{x+y+z}\times 0=0$$

55. (1)

	Acid		Water
Vessel A	3	:	1
Vessel B	5	:	3

Use Alligation



Ratio of → 1 : 2

56. (4) (25 × 10) M = (20 × 50) C
⇒ 1 M = 4 C

Work completed in 10 days by 5 men $=\frac{5}{10}=\frac{1}{2}$ part

Remaining work = $1-\frac{1}{2}=\frac{1}{2}$ part.

Let x children assist in remaining work
= (x + 5 × 4) children
= (20 + x) children
ATQ,

$\frac{1}{2}(20+x)=20 \Rightarrow 10+\frac{x}{2}=20$

$\Rightarrow$ x = 10 × 2 = 20 children

57. (3) Let C.P = 1000

M.P = $1000 \times \frac{115}{100}=1150$

Profit = 1150 – 920 = 230

$\therefore$ Profit % when traders uses a watt of 920 g instead of 1 kg = $\left(\frac{230}{920}\times 100\right)\% = 25\%$

58. (4) 90% of A = 30% of B
90A = 30B
$\Rightarrow$ B = 3A ...(1)

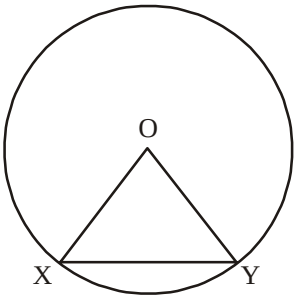
$B=\frac{2x}{100}\times A \Rightarrow 3A=\frac{2x}{100}\times A \Rightarrow x=150$

59. (3) According to question,
CP = 30 × 9.50 + 30 × 8.5
= 30 [9.5 + 8.5] = 30 × 18 = Rs. 540
SP = 60 × 8.90 = Rs. 534
Loss = CP – SP = 540 – 534 = Rs. 6

60. (3) Average speed = $\frac{2\times 6\times 3}{(6+3)}=4$ km / hr

61. (3) Given CP of 40 books = ` 3200
According to the question,
SP of 40 books
= CP of 40 books + SP of 8 books
[$\because$ SP = CP + PROFIT]
SP of 32 books = ` 3200
[$\because$ CP of 40 books = 3200]
SP of 1 book = ` 100
SP of 1 dozen books = ` 1200

62. (1)

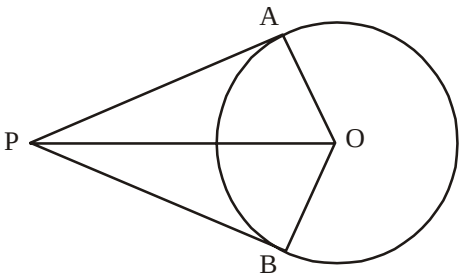


$\angle XOY = 90°$; OX = OY = radius (r)
$\therefore$ ΔXOY is a right angled triangle.

$\therefore \frac{1}{2}\times(OX)\times(OY)=32 \Rightarrow r^2 = 2 \times 32 = 64$

$\therefore$ $r=\sqrt{64}=8$
$\therefore$ Area of circle = $\pi r^2 = 64\pi$ sq. units.

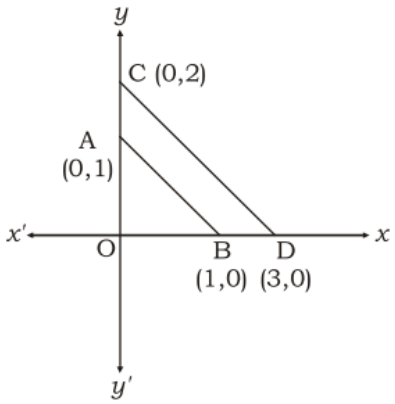
63. (3)



In right Δs OAP and OPB .
AP = PB, OA = OB, OP = OP
$\therefore$ $\Delta OAP = \Delta OPB$
$\therefore$ $\angle AOP = \angle POB$ and $\angle APO = \angle OPB$
From ΔAOP,
$\angle APO = 180° - 90° - 60° = 30°$
$\angle APB = 2 \times 30° = 60°$

64. (2) Let no. of persons be 'N'.
$\Rightarrow \frac{N\times 55}{1}=\frac{(N+6)\times 44}{1}$
$\Rightarrow$ 5N = 4N + 24 $\Rightarrow$ N = 24

65. (3)



x = 0 is the equation of y-axis.
y = 0 is the equation of x-axis.
Putting x = 0 in x + y = 1, y = 1
Putting y = 0 in x + y = 1 , x = 1
Putting x = 0 in 2x + 3y = 6
3y = 6 $\Rightarrow$ y = 2
Putting y = 0 in 2x + 3y = 6
2x = 6 $\Rightarrow$ x = 3
$\therefore$ OB = 1; OA = 1
OD = 3; OC = 2
$\therefore$ Required area = $\Delta OCD - \Delta OAB$

$=\frac{1}{2}\times 3\times 2-\frac{1}{2}\times 1\times 1 = 3-\frac{1}{2}=2\frac{1}{2}$ sq. units

66. (1) $\tan\theta + \cot\theta = 2$

$\Rightarrow \tan\theta + \frac{1}{\tan\theta} = 2$

$\Rightarrow \tan^2\theta - 2\tan\theta + 1 = 0$

$\Rightarrow (\tan\theta - 1)^2 = 0$

$\Rightarrow \tan\theta - 1 = 0$

$\Rightarrow \tan\theta = 1$

$\therefore \cot\theta = 1 \Rightarrow \theta = 45°$

$\therefore \tan^n 45° + \cot^n 45° = 1 + 1 = 2$

67. (1) $x + \frac{1}{x} = 3$

On sqaring, $\left(x + \frac{1}{x}\right)^2 = 9$

$\Rightarrow x^2 + \frac{1}{x^2} = 9 - 2 = 7$

Again, $\left(x + \frac{1}{x}\right)^3 = 27$

$\Rightarrow x^3 + \frac{1}{x^3} + 3\left(x + \frac{1}{x}\right) = 27$

$\Rightarrow x^3 + \frac{1}{x^3} = 27 - 3\times 3 = 18$

$\therefore \left(x^2 + \frac{1}{x^2}\right)\left(x^3 + \frac{1}{x^3}\right) = 7\times 18$

$\Rightarrow x^5 + \frac{1}{x^5} + \left(x + \frac{1}{x}\right) = 126$

$\Rightarrow x^5 + \frac{1}{x^5} = 126 - 3 = 123$

68. (1) $\tan15° \cot75° + \tan75° \cot15°$
$= \tan15° \cdot \cot(90° - 15°) + \tan(90° - 15°) \cdot \cot15°$
$= \tan^2 15° + \cot^2 15°$ ...(1)

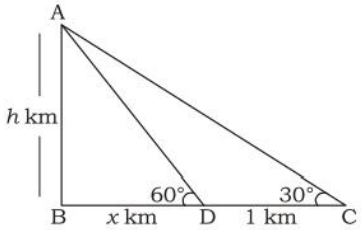
$\cot15° = 2 + \sqrt{3}$

Put value in eq. (1)

$\tan^2 15° + \cot^2 15° = (2 - \sqrt{3})^2 + (2 + \sqrt{3})^2$

$= 4 + 3 - 4\sqrt{3} + 4 + 3 + 4\sqrt{3} = 14$

69. (1)



From ΔABD

$\tan 60° = \frac{AB}{BD}$

$\Rightarrow \sqrt{3} = \frac{h}{x} \Rightarrow x = \frac{h}{\sqrt{3}}$ km ...(1)

From ΔABC

$\tan 30° = \frac{AB}{BC}$

$\Rightarrow \frac{1}{\sqrt{3}} = \frac{h}{\frac{h}{\sqrt{3}} + 1} \Rightarrow \sqrt{3}h = \frac{h}{\sqrt{3}} + 1$

$\Rightarrow \frac{3h - h}{\sqrt{3}} = 1 \Rightarrow 2h = \sqrt{3}$

$h = \frac{\sqrt{3}}{2}$ km

70. (2) $\sec\theta = \frac{4x^2 + 1}{4x}$

$\tan\theta = \sqrt{\sec^2\theta - 1}$

$= \sqrt{\left(\frac{4x^2 + 1}{4x}\right)^2 - 1} = \sqrt{\frac{(4x^2 + 1)^2 - (4x)^2}{(4x)^2}}$

$= \frac{4x^2 - 1}{4x}$

$\therefore \sec\theta + \tan\theta = \frac{4x^2 + 1}{4x} + \frac{4x^2 - 1}{4x}$

$= \frac{4x^2 + 1 + 4x^2 - 1}{4x} = \frac{8x^2}{4x} = 2x$

71. (1) Required percentage increase

$= \frac{40 - 30}{30} \times 100 = \frac{100}{3} = 33\frac{1}{3}\%$

72. (1) Income of company in 2002 = Rs. 40 lakhs
Expenditure of company in 2003 = Rs. 40 lakhs.

73. (2) Profit of company in 2004 = Rs. 25 lakhs

74. (3) Required difference = 20 – 10 = Rs. 10 lakhs.

75. (1) Average income of company

$= \frac{30 + 50 + 40 + 60 + 60}{5} = \frac{240}{5}$ = Rs. 48 lakhs

The incomes of company in years 2001, 2003 and 2004 were greater than Rs. 48 lakhs.