SSC CHSL - CHT1 : 180343 GRAND TEST HINTS AND SOLUTIONS

ANSWER KEY

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

1. (2) Student follows the teacher and disciple follows the religious leader.

2. (3) As, A D H M ↕ ↕ ↕ ↕ opposite Z W S N

Similarly, C F J O ↕ ↕ ↕ ↕ opposite X U Q L

3. (1) The relation is $\sqrt{x} : (\sqrt{x}-1)^3$

For x = 9, result $= (\sqrt{9}-1)^3 = (2)^3 = 8$

For x = 16, result $= (\sqrt{16}-1)^3 = (3)^3 = 27$.

4. (3) B L O C K E D Y O L X P V W

Reverse Reverse Reverse Reverse Reverse Reverse Reverse

O Z F M X S L A U N C H

Reverse Reverse Reverse Reverse Reverse Reverse

5. (3) Calendar is a list of dates whereas dictionary is a collection of words.

6. (3) Narmada falls in Arabian Sea where as the rest three falls in Bay of Bengal.

7. (1) All except Record are the brief notation used in a language.

8. (1) Second number = (First number)^2 /2, (2 - 4) is not following the same.

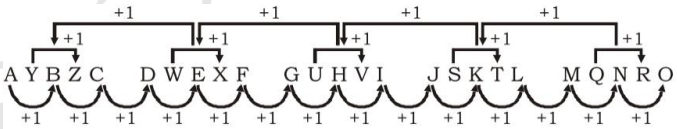
9. (2) $16 \times 4 = 64 \Rightarrow 6 - 4 = 2$

$9 \times 8 = 72 \Rightarrow 7 - 2 = 5$

$27 \times 3 = 81 \Rightarrow 8 - 1 = 7$

10. (3) 934 – 678 = 256

11. (2)

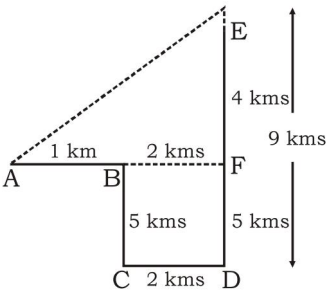


12. (2) The pattern is:

+1, +(1 + 2), +(1 + 2 + 3), +(1 + 2 + 3 + 4), +(1 + 2 + 3 + 4 + 5).

So, required number = 15 + 10 = 25

13. (3)



AF = 3 kms, EF = 4 kms

$\therefore$ AE $= \sqrt{3^2+4^2} = \sqrt{9+16} = \sqrt{25} = 5$ kms

So, he is 5 kms away from the starting point.

14. (1) $Z = 52 = 2 \times (26)$ → actual position in english alphabet

$ACT = 2 \times (1 + 3 + 20)$ → actual position in english alphabet

$= 2 \times 24 = 48$

$EAT = 2 \times (5 + 1 + 20)$ → actual position in english alphabet

$= 2 \times 26 = 52$

15. (4) Number of people who know all three subjects = 100
Number of people who know only civics = 170

$\therefore$ Required Ratio = $= \frac{100}{170} = \frac{10}{17}$

16. (3) The correct order is-

2 population → 4 unemploy-ment → 1 poverty → 5 disease → 3 death

17. (3) It is clear from the position of given die that the numbers 2, 3, 1 and 6 can't appear opposite to 4. So, it is clear that 5 appears opposite to 4. Since, in each of the die 4 appears on the top. So, 5 will be at the bottom of each die. Hence (3) is the right option.

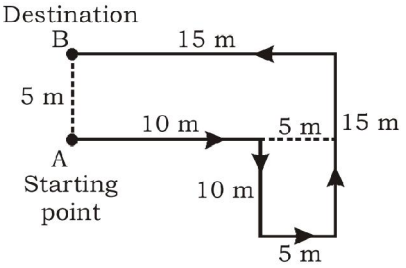
18. (2) A is the brother of F, who is the daughter of D. So, we can say that A is the son of D. P is the brother of D. So, it is clear that P is the uncle of A.

19. (4)

20. (3)

21. (1) In terms of height, we have the following sequence:
Q < P, R < P, T < S, S < Q.
Now the sequence becomes
(i) T < S < Q < R < P
(ii) T < S < R < Q < P
In both the sequences, we can observe that P is the tallest.

22. (1)



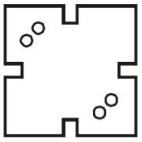
Required distance = 5 m.

23. (2)

C E G I K M **M O R T V X**
+2 +2 +2 +2 +2 +2 +3 +2 +2 +2

P R T V X Z Z B D F H J
+2 +2 +2 +2 +2 +2 +2 +2 +2 +2

24. (3)



25. (2)

51. (4) Let the time taken by 3 men = x days
Time taken by 9 women = x + 5 days
3m = x day

2 m = $\frac{3x}{2}$ days

Similarly, 9w = x + 5 days
3w = 3(x + 5) days
ATQ,

$$\frac{2}{3x} + \frac{1}{3(x+5)} = \frac{1}{6} \Rightarrow \frac{2x+10+x}{3x(x+5)} = \frac{1}{6}$$

$\Rightarrow 18x + 60 = 3x^2 + 15x \Rightarrow 3x^2 - 3x - 60 = 0$
$\Rightarrow x^2 - x - 20 = 0 \Rightarrow x = 5$
Time taken by 1 man = 3x = 3 × 5 = 15 days
Time taken by 1 women = 9(x + 5) = 90 days
Required output = 6 times

52. (3) Let total salary = 1300
Expenditure = 800
saving = 500

Expenditure on food = $\frac{20}{100} \times 800 = Rs.160$

Expenditure on clothes = $\frac{40}{100} \times 800 = Rs.320$

Money deposited in bank = $\frac{60}{100} \times 500 = Rs.300$

$\therefore$ Required percentage

$$= \frac{\text{Money spent on clothes}}{\text{Amount deposited in bank}} \times 100$$

$$= \frac{320}{300} \times 100 = \frac{320}{3} = 106\frac{2}{3}\%$$

53. (1) The given expression

$$= \frac{\frac{1}{3} \times 3 \times \frac{1}{3}}{\frac{1}{3} \div \left(\frac{1}{3} \times \frac{1}{3}\right)} - \frac{1}{9} = \frac{\frac{1}{3}}{\frac{1}{3} \div \frac{1}{9}} - \frac{1}{9} = \frac{\frac{1}{3}}{\frac{1}{3} \times 9} - \frac{1}{9}$$

$$= \frac{1}{3} - \frac{1}{9} = \frac{1}{9} - \frac{1}{9} = 0$$

54. (2) SI = ` (7200 – 6000) = ` 1200

$$\therefore SI = \frac{P \times R \times T}{100} \Rightarrow 1200 = \frac{6000 \times R \times 4}{100}$$

$\Rightarrow R = \frac{1200 \times 100}{6000 \times 4} = 5\%$

New rate of R = 5 × 1.5 = 7.5%

Then, SI = $\frac{6000 \times 7.5 \times 5}{100}$ = ` 2250

∴ Amount = ` (6000 + 2250) = ` 8250

55. (2) Here, 280 is a multiple of 35.
∴ Required remainder
= Remainder obtained on dividing 115 by 35 = 10

56. (4) $\left(\frac{1+x}{x}\right)\left(\frac{x+2}{x+1}\right)\left(\frac{x+3}{x+2}\right)\left(\frac{x+4}{x+3}\right) = \frac{x+4}{x}$

57. (3) Pipe A can fill a tank = 20 minutes
Let the efficiency of pipe A = 100
Then the efficiency of 5 new pipes

$= 100 \times \frac{20}{100} \times 5 = 100$

$M_1D_1 = M_2D_2$
$\Rightarrow 20 \times 100 = 100 \times D_2$
$\Rightarrow D_2 = 20$ min

58. (3) $\frac{(4x^3 - x)}{(2x+1)(6x-3)} = \frac{x(4x^2-1)}{(2x+1) \times 3(2x-1)}$

$= \frac{x \times (2x-1)(2x+1)}{3 \times (2x+1)(2x-1)} = \frac{x}{3} = \frac{9999}{3} = 3333.$

59. (3) ATQ,

	A	:	B	:	C
Days →	$x+2$	:	$x+8$	:	x

Now from question condition,

$\frac{1}{x+2} + \frac{1}{x+8} = \frac{1}{x}$

after solving x = 4
Time taken by B to complete the work = (4 + 8) = 12 days

60. (3) Let the numbers be x, y and z.
Then,
x : y = 2 : 3
y : z = 5 : 8
∴ x : y : z = 2 × 5 : 3 × 5 : 3 × 8 = 10 : 15 : 24
Sum of the ratios = 10 + 15 + 24 = 49

∴ The second number $= \frac{15}{49} \times 98 = 30$

61. (1) Area of circle (A) = πr^2

$r = \sqrt{\frac{A}{\pi}}$

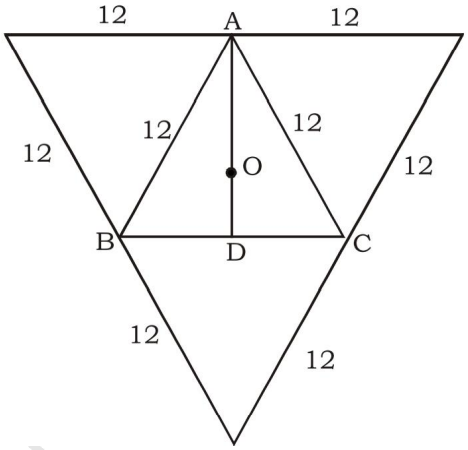
ATQ,

3 × side of triangle $= 2\pi \times \sqrt{\frac{A}{\pi}}$

Side of triangle $= \frac{2\sqrt{\pi A}}{3}$

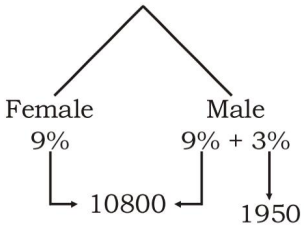
Area of triangle $= \frac{\sqrt{3}}{4} \times \left(\frac{2\sqrt{\pi A}}{3}\right)^3 = \frac{\pi\sqrt{3}A}{9}$ cm^2

62. (2)



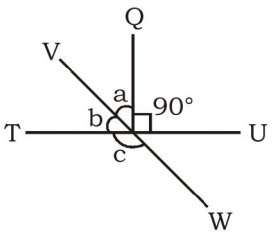
Area of equilateral triangle
$= \frac{\sqrt{3}}{4}a^2 = \frac{\sqrt{3}}{4} \times (12)^2 = \frac{144\sqrt{3}}{4}$
Now, the area of a regular tetrahedron
$= 4 \times \frac{144}{4} \times \sqrt{3} = 144\sqrt{3}\ cm^2$

63. (4) Total population → 120000



Total population of male = 65000
∴ No. of females = 67750
∴ Requird Diff. = 2750

64. (4)



∠a = 36°
∠b = 54°
∴ value of ∠c = 180° − ∠54
⇒ ∠c = 126°

65. (1) In 400 gm of alloy.

$\text{Zinc} = \frac{5}{8} \times 400 = 250 \text{ gm}$

$\text{Copper} = \frac{3}{8} \times 400 = 150 \text{ gm}$

x gm of copper be mixed, then

$\frac{250}{150 + x} = \frac{5}{4} \Rightarrow 750 + 5x = 1000$

$\Rightarrow 5x = 1000 - 750 = 250 \Rightarrow x = 50$ gm

66. (3) Let a = b = c = 2, then $2s = 6 \Rightarrow s = 3$

$\therefore (s-a)^3 + (s-b)^3 + 3(s-a)(s-b)c$

$= (3-2)^3 + (3-2)^3 + 3(3-2)(3-2) \times 2$

$= 1 + 1 + 3 \times 2 = 8 = c^3$

67. (4) Length of the floor = 15 m 17 cm = 1517 cm

Breadth of the floor = 9 m 2 cm = 902 cm

Area of the floor = 1517×902 cm^2

The number of square tiles will be least, when the size of each tile is maximum.

$\therefore$ Size of each tile = HCF of 1517 and 902 = 41

$\therefore$ Required number of tiles $= \frac{1517 \times 902}{41 \times 41} = 814$

68. (2) $x = a\cos\theta, y = b\sin\theta$

$\therefore b^2x^2 + a^2y^2 = b^2a^2\cos^2\theta + a^2b^2\sin^2\theta$

$= a^2b^2(\cos^2\theta + \sin^2\theta) = a^2b^2 \times 1 = a^2b^2.$

69. (4) Given $\frac{P^2 - 4P + 4}{4P} = 8$

$= \frac{P^2 - 4P + 4}{P} = 32$

$= \frac{P^2}{P} - \frac{4P}{P} + \frac{4}{P} = 32$

$\Rightarrow P - 4 + \frac{4}{P} = 32$

$\Rightarrow P + \frac{4}{P} = 36$

70. (1) $\because x = \frac{1}{y}$

$\therefore x + \frac{1}{x} = 4$

ATQ,

$\frac{x^2 + y^2}{x^3 + y^3} = \frac{x^2 + \frac{1}{x^2}}{x^3 + \frac{1}{x^3}} = \frac{14}{52} = \frac{7}{26}$

71. (1) Required expenditure

$= 25000 \times \frac{(20+30)}{100} = Rs.12500.$

72. (3) Required total expenditure

$= \frac{15000}{(10+20)} \times 100 = Rs.50000.$

73. (4) From option (4),

$\frac{360°}{100} \times (30 - 15) = \frac{360°}{100} \times 15 = 54°.$

74. (2) Required percentage

$= \frac{(15-10)}{15} \times 100 = \frac{5}{15} \times 100 = 33.33\%.$

75. (3) From option (3),

$\frac{360°}{100} \times (20 + 5) = \frac{360°}{100} \times 25 = 90°.$