

**SSC CHSL - CHT1 : 180344 GRAND TEST**  
**HINTS AND SOLUTIONS**

**ANSWER KEY**

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

1. (4) L O G I C  
 $\uparrow +1 \quad \uparrow +1 \quad \uparrow +1 \quad \uparrow +1 \quad \uparrow +1$   
 K N F H B  $\xrightarrow{\text{Reverse}}$  B H F N K
- C L E R K  
 $\uparrow +1 \quad \uparrow +1 \quad \uparrow +1 \quad \uparrow +1 \quad \uparrow +1$   
 B K D Q J  $\xrightarrow{\text{Reverse}}$  J Q D K B

2. (1) A car runs on petrol whereas Television works by Electricity.

3. (1)  $182 \quad 342 \quad 210 \quad 380$   
 $\downarrow \quad \downarrow \quad \downarrow \quad \downarrow$   
 $13^2+13 \quad 18^2+18 \quad 14^2+14 \quad 19^2+19$   
 $\underbrace{\hspace{10em}}_5 \quad \underbrace{\hspace{10em}}_5$

1

4. (4) As smoke results pollution similarly battle results Destruction.  
 5. (4) All the pairs except (4) consist of prime number. 14 is not a prime number.

6. (1) All except dog come under the category of cattle.  
 7. (1) All except Sparrow are flesh eating birds.

8. (4)  $117 \quad 13 \quad 162 \quad 18 \quad 171 \quad 19 \quad 304 \quad 16$   
 $\underbrace{\hspace{2em}}_{\times 9} \quad \underbrace{\hspace{2em}}_{\times 9} \quad \underbrace{\hspace{2em}}_{\times 9} \quad \underbrace{\hspace{2em}}_{\times 19}$

9. (3)  $(6^2 + 3^2) - (4^2 + 2^2) = (36 + 9) - (16 + 4) = 45 - 20 = 25$   
 $(11^2 + 7^2) - (8^2 + 6^2) = (121 + 49) - (64 + 36) = 170 - 100 = 70$

$(4^2 + 1^2) - (5^2 + x^2) = -12$   
 $\Rightarrow (17 + 12) = (25 + x^2)$   
 $\Rightarrow x^2 = 4 \Rightarrow x = 2.$

10. (4)  $\begin{matrix} \boxed{3 \quad 4 \quad 5} \\ \downarrow \times 2 \\ x = \boxed{6 \quad 8 \quad 10} \\ \downarrow \times 2 \\ \boxed{216 \quad 512 \quad ?} \end{matrix}$   
 $x = 6, 8, 10 \Rightarrow x^3 = 216, 512, 1000$

So, ? = 1000

11. (3)  $125 \quad 80 \quad 45 \quad 20 \quad 5$   
 $\underbrace{\hspace{2em}}_{-45} \quad \underbrace{\hspace{2em}}_{-35} \quad \underbrace{\hspace{2em}}_{-25} \quad \underbrace{\hspace{2em}}_{-15}$   
 $\underbrace{\hspace{2em}}_{+10} \quad \underbrace{\hspace{2em}}_{+10} \quad \underbrace{\hspace{2em}}_{+10}$

12. (1) The pattern is:  
 $\times 3 - 1, \times 3 - 2, \times 3 - 3, \times 3 - 4, \times 3 - 5$   
 So, required number =  $185 \times 3 - 5 = 550$

13. (3) We have,

$30 \left( H - \frac{M}{5} \right) + \frac{M}{2}$  degree

$= 30 \left( 9 - \frac{25}{5} + \frac{25}{2} \right)$  degree

$= 30 \times 4 + 12.5$  degree =  $132.5^\circ$

$\therefore$  Reflex angle =  $360 - 132.5 = 227.5.$

14. (2)  $\leftarrow$  left end  $\hspace{10em}$  right end  $\rightarrow$   
 1 2 3 4 5 6 7 8 9 10  
 Ashutosh (current position)  $\hspace{2em}$  Ashutosh (previous position)

So, option (2) is the right answer.

15. (3) **b a b b b / b a b bb / b a bb b / b**  
 16. (4) We can find only one 'T' in GOVERNMENT ROCKS!  
 17. (3) A nib is fitted in the pen to write with it. But a nib is called needle. So, a needle will be fitted in the pen.  
 18. (3) After interchanging the signs, we have  
 $1 \times 9 - 3 \div 1 \div 3 + 1 = 1 \times 9 - 3 \div 3 + 1$   
 $= 1 \times 9 - 1 + 1$   
 $= 9 - 1 + 1 = 9$

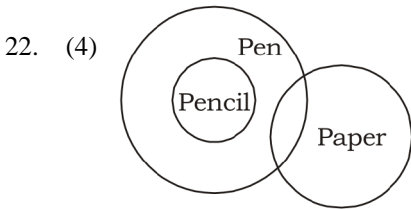
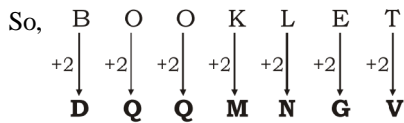
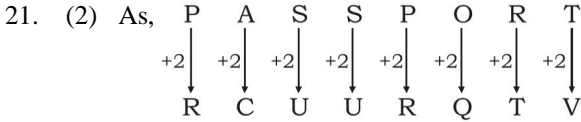
19. (1) Let the age of father and son be  $x$  and  $y$  respectively.

$$x - y = y \Rightarrow x = 2y$$

Now,  $x = 36$   
 $\Rightarrow 2y = 36$   
 $\Rightarrow y = 18$

So, age of son 5 years ago =  $18 - 5 = 13$  yrs

20. (2) The region which represents all three i.e., owner, broker and worker is 'T'.



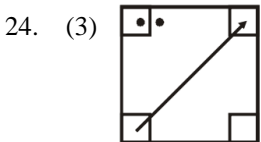
- I. ✓
- II. ✓

Both (I) & (II) follow.

23. (3) Given equation:-

$$8 \times 2 + 3 - 5 = 21$$

let us change 'x' and '-' signs then we have  
 $8 - 2 + 3 \times 5 = 8 - 2 + 15 = 23 - 2 = 21$   
 So, (3) is the right option.



25. (3)

51. (2) Let no. of men be  $x$ .

According to the given data, we have

$$\frac{46575}{48 \times 45} \times 2 = \frac{17250}{16 \times x}$$

[As daily wages of man is double of that of woman]

$$\Rightarrow x = \frac{17250 \times 48 \times 45}{46575 \times 2 \times 16} = 25 \text{ men}$$

52. (1) Let the cost price of each goat = ` 100

<b>C.P</b>		<b>S.P</b>	
1st goat	$\rightarrow 100_{.9}$	$\xrightarrow{-20\%}$	$80_{.9}$
2nd goat	$\rightarrow 100_{.5}$	$\xrightarrow{+44\%}$	$144_{.5}$

} same

$\therefore$  cost price of 1st goat

$$= \frac{900}{1400} \times 1008 = ` 648$$

53. (1) The candidate at second place got

$$= (100 - (55 + 5)) = 40\% \text{ votes}$$

Difference between winner and second candidate at second place =  $(55 - 40) = 15\%$   
 ATQ,  
 $15\% \rightarrow 9000$

$$100\% \rightarrow \frac{100}{15} \times 9000 = 60000$$

54. (3) Let the principal be  $x$

$$\therefore \text{Principal SI} = \frac{7x}{4}$$

$$\therefore \text{SI} = \frac{7x}{4} - x = \frac{3x}{4}$$

$$\text{Rate} = \frac{\text{SI} \times 100}{\text{Principal} \times \text{Time}}$$

$$= \frac{3x \times 100}{4 \times x \times 4} = 18\frac{3}{4}\%$$

55. (1) Remaining sum = 42050

$$5\% = \frac{1}{20}$$

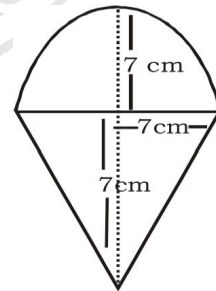
$$A : B$$

$$441 : 400 \rightarrow 840$$

$\downarrow \times 50$   
42050

$\therefore$  Share of B =  $400 \times 50 = \text{Rs. } 20,000$

56. (1)



Height of hemispherical part = 7 cm = radius of hemispherical part

ATQ,  
 Radius of hemispherical part = height of the cone = 7 cm

$\therefore$  Volume of ice cream = Volume of cone + hemispherical part

$$= \frac{1}{3} \pi r^2 h + \frac{2}{3} \pi r^3 = \frac{1}{3} \pi r^2 (h + 2r)$$

$$= \frac{1}{3} \times \frac{22}{7} \times 7 \times 7 (7 + 2 \times 7) = \frac{22 \times 7}{3} \times 21$$

$$= 22 \times 7 \times 7 = 1078 \text{ cm}^3$$

57. (1)  $2x + 3y = 29$  and  $y = x + 3$   
 Now,  $2x + 3y = 29$   
 $\Rightarrow 2x + 3(x + 3) = 29$  [Put the value of y]  
 $\Rightarrow 2x + 3x + 9 = 29$   
 $\Rightarrow 5x = 20 \Rightarrow x = 4$ .

58. (2) Average speed =  $\frac{\text{Total distance}}{\text{Total time}}$   
 $= \frac{24 + 24 + 24}{\frac{24}{6} + \frac{24}{8} + \frac{24}{12}} = \frac{72}{4 + 3 + 2} = 8 \text{ km/hr.}$

59. (1) Interest = Rs.  $(81 - 72) = 9$   
 Let the time be t years  
 Then,  $9 = \frac{72 \times 25 \times t}{4 \times 100} \Rightarrow t = \frac{9 \times 400}{72 \times 25} = 2 \text{ years}$

60. (3)

Dog	:	Cat
Leap/min	5	4
Distance/leap	8 m	5 m
Speed-	40 m/min	20 m/min

Relative speed- 20 m/min  
 Actual distance b/w cat & dog =  $50 \times 8 = 400 \text{ m}$   
 Time taken by dog =  $\frac{400}{20} = 20 \text{ min}$   
 Distance travelled by dog =  $20 \times 40 = 800 \text{ m}$

61. (1) L(leak pipe)  $\rightarrow 6$   
 $\begin{matrix} & & -5 \\ & & \searrow \\ & & (30) \\ & & \swarrow \\ A + L \rightarrow 15 & & -2 \end{matrix}$   
 Capacity of tank  
 Efficiency of filling pipe = 3 units/hour  
 Required time to fill the tank =  $\frac{30}{3} = 10 \text{ hours}$

ATQ,  
 Tap (A) fill at the rate 10 litres per hour then capacity of tank =  $10 \times 10 = 100 \text{ litres}$

62. (3) Let the sum be P.  
 As the interest is compounded half-yearly.  
 $\therefore R = 2\%, T = 2 \text{ half years}$   
 $\therefore A = P \left(1 + \frac{R}{100}\right)^T$   
 $\Rightarrow 7803 = P \left(1 + \frac{2}{100}\right)^2 \Rightarrow 7803 = P \left(1 + \frac{1}{50}\right)^2$   
 $\Rightarrow 7803 = P \times \frac{51}{50} \times \frac{51}{50}$   
 $\Rightarrow P = \frac{7803 \times 50 \times 50}{51 \times 51} = \text{Rs.} 7500$ .

63. (1) Let the CP of article be x and its marked price be y.  
 ATQ,  
 $90\% \text{ of } y = 115\% \text{ of } x$   
 $\Rightarrow \frac{y \times 90}{100} = \frac{x \times 115}{100}$   
 $\Rightarrow \frac{x}{y} = \frac{90}{115} = \frac{18}{23} = 18 : 23$ .

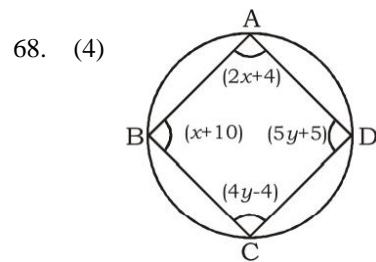
64. (4) Distance covered =  $66 \times \frac{5}{2}$   
 $2\pi r = 165 \text{ metre}$   
 $\Rightarrow r = \frac{165 \times 7}{2 \times 22} = 26.25 \text{ metres}$

65. (2) Given  $5N = 15R$   
 $N : R = 3 : 1$  &  $10R = 20K$   
 $R : K = 2 : 1$

N	:	R	:	K
3	:	1	:	2
	:	2	:	1
6	:	2	:	1
$\downarrow \times 2000$				$\downarrow \times 2000$
Nitya's income				2000
				12000

66. (3)  $AB \parallel CD \parallel PQ$  (Given)  
 Let  $AB = a, PQ = b, CD = c$   
 $\therefore \frac{1}{b} = \frac{1}{a} + \frac{1}{c} \Rightarrow \frac{1}{b} = \frac{1}{12} + \frac{1}{8} \Rightarrow \frac{1}{b} = \frac{3+2}{36}$   
 $\Rightarrow \frac{1}{b} = \frac{5}{36} \Rightarrow b = \frac{36}{5} \text{ cm}$

67. (3)  $M + T + W + TH = 4 \times 37 = 148^\circ\text{C}$  ... (i)  
 $TH + F + S + S = 4 \times 41 = 164^\circ\text{C}$  ... (ii)  
 $M + T + \dots + S + S = 7 \times 39 = 273^\circ\text{C}$  ... (iii)  
 $\therefore$  The temperature of the fourth day =  $148 + 164 - 273 = 39^\circ\text{C}$



$\angle B + \angle D = 180^\circ$   
 $\angle A + \angle C = 180^\circ$  and  
 $\Rightarrow x + 10 + 5y + 5 = 180^\circ$   
 $\Rightarrow x + 5y = 165$  ... (i)  
 $2x + 4 + 4y - 4 = 180^\circ$   
 $\Rightarrow x + 2y = 90^\circ$  ... (ii)  
 On solving (i) and (ii),  
 $x = 40^\circ$  and  $y = 25^\circ$   
 So,  $x + y = 40^\circ + 25^\circ = 65^\circ$

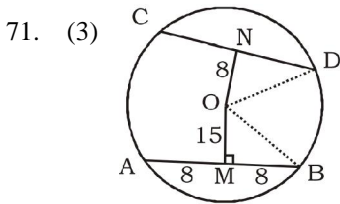


69. (3)  $x + \frac{1}{2x} = 2$  or  $2x + 2 \times \frac{1}{2x} = 2 \times 2 \Rightarrow 2x + \frac{1}{x} = 4$

$\Rightarrow 8x^3 + \frac{1}{x^3} = 4^3 - 3 \times 2x \times \frac{1}{x} \times 4 = 64 - 24 = 40$

70. (1)  $\sin \theta = \frac{2mn}{m^2 + n^2} = \frac{\sin \theta \times \frac{1}{\tan \theta}}{\cos \theta}$

$= \frac{\sin \theta \times \frac{1}{\sin \theta} \times \cos \theta}{\cos \theta} = 1$



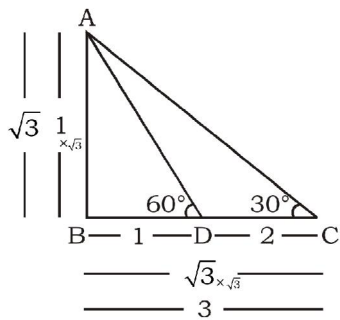
$OB = \sqrt{15^2 + 8^2} = \sqrt{225 + 64} = \sqrt{289} = 17$  cm

$\therefore$  OB & OD are radius of circle.

$DN = \sqrt{17^2 - 8^2} = \sqrt{289 - 64} = \sqrt{225} = 15$  cm

$CD = CN + DN = 15 + 15 = 30$  cm

72. (1)



$\therefore AB = \sqrt{3} = 30$  given

$\therefore CD = \frac{30}{\sqrt{3}} \times 2 = 20\sqrt{3}$

73. (3) Total runs =  $20 \times 7.2 = 144$

Total runs in 15 overs =  $15 \times 6 = 90$

Runs to be scored in the next 5 overs =  $144 - 90 = 54$

$\therefore$  Now, required run-rate to win the match

$= \frac{54}{5} = 10.8$

74. (4) H = 60 cm, radius = 32 cm

Area of the curved surface =  $\pi r l$

$L = \sqrt{R^2 + H^2} = \sqrt{(32)^2 + (60)^2}$

$= \sqrt{1024 + 3600} = \sqrt{4624} = 68$  cm

Area of curved surface =  $\pi r l = \frac{22}{7} \times 32 \times 68$

Total cost of painting =  $35 \times \frac{22}{7} \times 32 \times 68 \times \frac{1}{10000}$

= Rs. 23.94 approximate

75. (4) Assume  $\theta = 45^\circ$

then  $4m = 1 \times \left(1 + \frac{1}{\sqrt{2}}\right)$

$m = \frac{\sqrt{2} + 1}{4\sqrt{2}}$  and  $n = \frac{\sqrt{2} - 1}{4\sqrt{2}}$

$\therefore m^2 - n^2 = \frac{1}{32} [(\sqrt{2} + 1)^2 - (\sqrt{2} - 1)^2]$

$= \left[\frac{1}{32} (4\sqrt{2})\right]$

$\Rightarrow (m^2 - n^2) = \frac{1}{32}$

From options-

$mn = \frac{\sqrt{2} + 1}{4\sqrt{2}} \cdot \frac{\sqrt{2} - 1}{4\sqrt{2}} = \frac{1}{32}$

$\therefore (m^2 - n^2) = mn$