

**SSC CGL - 170841 GRAND TEST**  
**HINTS AND SOLUTIONS**

**ANSWER KEY**

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

- (1) As,  $335 - 216 = 119$   
Similarly,  $987 - 868 = 119$
- (1)
 

M	O	N	K	E	Y
↓-1	↓-1	↓-1	↓-1	↓-1	↓-1
L	N	M	J	D	X
Reverse →					
X D J M N L					

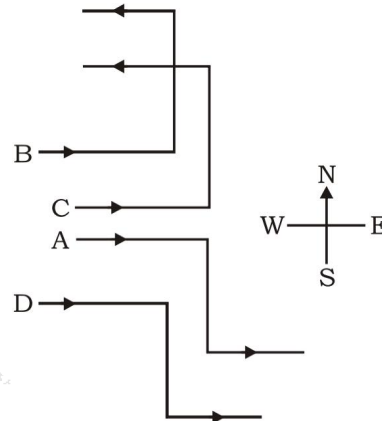
  

T	I	G	E	R
↓-1	↓-1	↓-1	↓-1	↓-1
S	H	F	D	Q
Reverse →				
Q D F H S				
- (2) If skirmish is not controlled, it will give rise to war and if disease is not controlled, it will give rise to epidemic.
- (4) As 'Conduction' is the property found in 'Metal', in the same way 'insulation' is the property found in 'Plastic'.
- (2) All except Chandelas were associated with ancient kingdoms in southern India, While Chandelas formed a kingdom in north India.

1

- (3) In all other groups, the third and second letters are consecutive and first letter is 3 steps ahead of second.
- (1) Except microbe, the other three are man-made.
- (3) Except Neurologist, the other three are related to social science, while neurologist is a medical professional who specializes in brain.
- (2) STORY

10. (3)

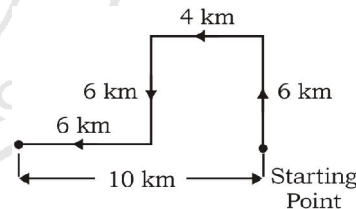


Consider all distances be 50 kms.

11. (3)

When this figure is folded to form a cube then the face bearing three dots will lie opposite the face bearing five dots.

12. (1)



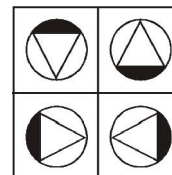
So, he is 10 kms in west from starting point.

13. (4) As,  $0 \times 1 \times 2 \dots \times 9 = 0$  and  $0 + 6 = 6$ .

14. (3) The correct order is :

Newly married couple	Family	Caste	Clan	Species
3	2	1	4	5

15. (4)



16. (1) The series is  $10^2 + 1 = 101$ ,  $11^2 - 1 = 120$ ,  $12^2 + 1 = 145$ ,  $13^2 - 1 = 168$ ,  $14^2 + 1 = 197$ ,  $15^2 - 1 = 224$ .

17. (2) 28 days after 26/2/12 is 25/3/12. As, in the given series the difference between two consecutive dates is 28 days. 2012 was a leap year.

18. (3) Both assumptions I and II are implicit. Clearly, the penalty is imposed to prevent people from misusing the alarm chain. This means that some people misuse it. So, I is implicit. The alarm chain is provided to stop the running train at the time of urgency. So, II is also implicit.

19. (3)

$$\begin{array}{cccccc} 9 & 19 & 40 & 83 & 170 & 345 \\ \times 2 + 1 & \times 2 + 2 & \times 2 + 3 & \times 2 + 4 & \times 2 + 5 & \\ \hline & & & & & \mathbf{344} \end{array}$$

20. (4)  $9 - 5 = 4; 4 \times 2 = 8$

$$17 - 11 = 6; 6 \times 2 = 12$$

$$26 - 19 = 7; 7 \times 2 = 14$$

21. (1)  $13^2 + 14^2 = 169 + 196 = 365$

$$15^2 + 16^2 = 225 + 256 = 481$$

$$\therefore 18^2 + 19^2 = 324 + 361 = 685$$

22. (3)

23. (4)

24. (4)

25. (1)

51. (3) Net C.P. =  $4700 + 800 = 5500$

$$\therefore \text{Required \%} = \frac{300}{5500} \times 100 = 5\frac{5}{11}\%$$

52. (2)  $\therefore \cos 43^\circ = \frac{x}{\sqrt{x^2 + y^2}}$

$$\Rightarrow \cos(90^\circ - 47^\circ) = \frac{x}{\sqrt{x^2 + y^2}}$$

$$\Rightarrow \sin 47^\circ = \frac{x}{\sqrt{x^2 + y^2}}$$

$$\Rightarrow \cos 47^\circ = \sqrt{1 - \sin^2 47^\circ} = \sqrt{1 - \left(\frac{x}{\sqrt{x^2 + y^2}}\right)^2}$$

$$= \sqrt{1 - \frac{x^2}{x^2 + y^2}} = \sqrt{\frac{x^2 + y^2 - x^2}{x^2 + y^2}}$$

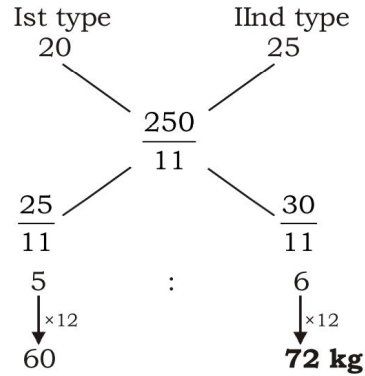
$$= \sqrt{\frac{y^2}{x^2 + y^2}} = \frac{y}{\sqrt{x^2 + y^2}}$$

$$\therefore \cos 47^\circ = \frac{y}{\sqrt{x^2 + y^2}}$$

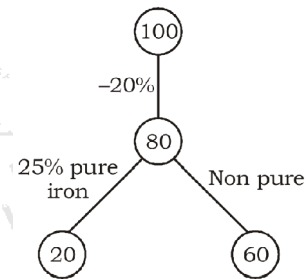
$$\text{So, } \tan 47^\circ = \frac{\sin 47^\circ}{\cos 47^\circ} = \frac{\frac{x}{\sqrt{x^2 + y^2}}}{\frac{y}{\sqrt{x^2 + y^2}}} = \frac{x}{y}$$

53. (3)  $10\% = \frac{1}{10}$

$$\text{Cost price of mixture} = \frac{250}{11}$$



54. (2) Let the total quantity of hematite mined = 100 kg. According to question,



$$\therefore 20 \text{ units} = 80,000 \text{ kg}$$

$$1 \text{ unit} = 4,000 \text{ kg}$$

$$\text{Total hematite} = 100 \times 4000 = 4,00,000 \text{ kg}$$

55. (2) Here, first divisor (175) is a multiple of second divisor (25).

$\therefore$  Required remainder

$$= \text{Remainder obtained on dividing } 132 \text{ by } 25 = 7$$

56. (4) Required average weight

$$\frac{(50 \times 6 + 51 \times 2 + 55 \times 2)}{10}$$

$$= \frac{300 + 102 + 110}{10} = \frac{512}{10} = 51.2 \text{ kg.}$$

57. (3) First of all, we find the HCF of 945 and 2475.

$$\text{So, HCF} = 45$$

$\therefore$  Maximum number of animals in each flock = 45

Required total number of flocks

$$= \frac{945}{45} + \frac{2475}{45} = 21 + 55 = 76.$$

58. (3)  $a = \frac{1+x}{2-x}$

$$\Rightarrow \frac{1}{a+1} + \frac{2a+1}{a^2-1} = \frac{3a}{a^2-1}$$

$$\Rightarrow \frac{3\left(\frac{1+x}{2-x}\right)}{\left(\frac{1+x}{2-x}\right)^2 - 1} = \frac{3(1+x)(2-x)}{1+x^2+2x-(4+x^2-4x)}$$

$$= \frac{3(1+x)(2-x)}{6x-3} = \frac{3(1+x)(2-x)}{3(2x-1)} = \frac{(1+x)(2-x)}{(2x-1)}$$

59. (4)  $\angle SPQ = 90^\circ$   
 $\therefore \angle PSQ = 180^\circ - 90^\circ - 35^\circ = 55^\circ$   
 $\therefore \angle PSQ = \angle PRQ = x^\circ = 55^\circ$

60. (3)  $\left[ \frac{11}{2} \times \text{min. hand} - 30 \times \text{hr. hand} \right]^\circ$   
 $= \left[ \frac{11}{2} \times 20 - 30 \times 3 \right]^\circ = [110 - 90]^\circ = 20^\circ$

61. (1) Let speed of cyclist =  $x$  kmph & Time =  $t$  hours  
 Then distance covered by jogger =  $\frac{xt}{2}$  and time =  $2t$   
 $\therefore$  Required ratio =  $\frac{xt}{2 \times 2t} : x = 1 : 4$ .

62. (1)  $\frac{\tan^2 \theta}{\sec \theta + 1} - \sec \theta$   
 $= \frac{\tan^2 \theta (\sec \theta - 1)}{(\sec \theta + 1)(\sec \theta - 1)} - \sec \theta$   
 $= \frac{\tan^2 \theta (\sec \theta - 1)}{\sec^2 \theta - 1} - \sec \theta$  [ $\because \sec^2 \theta - 1 = \tan^2 \theta$ ]  
 $= \frac{\tan^2 \theta (\sec \theta - 1)}{\tan^2 \theta} - \sec \theta = \sec \theta - 1 - \sec \theta = -1$ .

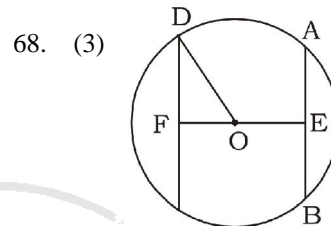
63. (1) Length of hypotenuse =  $\sqrt{24^2 + 7^2} = 25$   
 $\therefore \frac{1}{2} \times 25 \times h = \frac{1}{2} \times 7 \times 24 \Rightarrow h = \frac{7 \times 24}{25} = 6.72$  cm

64. (3) Marks in Physics = 80 out of 100  
 Marks in Chemistry = 66 out of 100  
 Marks obtained in all subject =  $\frac{80}{100} \times 400 = 320$   
 So, marks obtained in maths =  $320 - (80 + 66) = 174$  out of 200  
 Percentage marks obtained in Maths =  $\frac{174}{200} \times 100 = 87\%$

65. (4)  $x \cos 60^\circ - \sin 30^\circ = x \tan 30^\circ \cot 60^\circ$   
 $\Rightarrow x \times \frac{1}{2} - \frac{1}{2} = x \times \frac{1}{\sqrt{3}} \times \frac{1}{\sqrt{3}}$   
 $\Rightarrow \frac{x}{2} - \frac{1}{2} = \frac{x}{3} \Rightarrow \frac{x}{6} = \frac{1}{2} \Rightarrow x = 3$

66. (4) Difference of amount in 1 year = ` 242  
 $\therefore$  Rate % =  $\frac{242}{2420} \times 100 = 10\%$

67. (1) If  $a, b, c$  are lengths of perpendiculars. Then,  
 Side of the triangle =  $\frac{2}{\sqrt{3}}(a+b+c)$   
 $\therefore$  Area =  $\frac{\sqrt{3}}{4}(\text{side})^2 = \frac{\sqrt{3}}{4} \left\{ \frac{2}{\sqrt{3}}(a+b+c) \right\}^2$   
 $= \frac{\sqrt{3}}{4} \times \frac{4}{3}(a+b+c)^2 = \frac{\sqrt{3}}{3}(a+b+c)^2$



68. (3) In figure,  $AB = 16$  cms,  $OE = 15$  cms  
 In  $\triangle OEA$ ,  $OE^2 + AE^2 = OA^2$   
 $\Rightarrow OA^2 = 15^2 + 8^2 = 17^2 \Rightarrow OA = 17$   
 $\therefore OA = OD = 17$  cms  
 And  $OF = 8$  cms  
 In  $\triangle OFD$ ,  $OF^2 + DF^2 = OD^2$   
 $\Rightarrow DF^2 = 17^2 - 8^2 = 15^2 \Rightarrow DF = 15$  cms  
 $\therefore$  Length of chord =  $15 \times 2 = 30$  cms

69. (1) Let the pocket money be  $P$  rupees then  
 $P \times \left( \frac{4}{5} \times \frac{3}{4} \times \frac{9}{10} \right) = 13.50 \Rightarrow P = \text{Rs.} 25$ .

71. (4) Volume of hollow cylinder =  $\pi(R^2 - r^2)h$   
 $\therefore \pi(9^2 - r^2) \times 14 = 748$   
 $\Rightarrow 81 - r^2 = \frac{748}{14} \times \frac{7}{22} \Rightarrow r^2 = 81 - 17 = 64 \Rightarrow r = 8$   
 So, thickness =  $9 - 8 = 1$  cm

72. (4) Let the sum lent in each case be  $x$ .  
 Then,  
 $\frac{x \times 9 \times 2}{100} + \frac{x \times 10 \times 2}{100} = 760$   
 $\Rightarrow \frac{x \times 2}{100}(9+10) = 760 \Rightarrow \frac{2 \times 19x}{100} = 760$   
 $\Rightarrow x = \frac{760 \times 100}{2 \times 19} = \text{Rs.} 2000$ .

73. (4) Difference of marks between Physics & Chemistry =  $191.25 - 157.5 = 33.75$   
 Difference of marks between Social Science & Chemistry =  $157.5 - 123.75 = 33.75$

74. (3) Marks obtained in (Maths & Chemistry) = 360  
Marks obtained in (Physics & Social Science) = 315  
Difference = 45
75. (4) Marks obtained in English = 135.
76. (3) Replace 'arising' by 'rising'.
77. (2) Sentence starting with 'It is high time' takes simple past form. Thus, replace 'leave' by 'left'.
78. (2) As the sentence is in passive form. Thus, replace 'to attend' by 'to be attended'.
87. (3) The subject of the sentence is 'My brother'. Thus, it will take singular verb.
88. (2) Verb 'avail' takes 'of' and reflexive pronoun after it.
89. (1) 'Hardly ..... when' is an example of correlative conjunction.
90. (3) 'Hardly any' means 'very little'.

