



**SSC CGL - 180726 GRAND TEST**  
**HINTS AND SOLUTIONS**

**ANSWER KEY**

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

1. (4) To chat is to talk and to flutter is to flap.

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

3. (3) A professor works at a college, and a mechanic works at a garage.

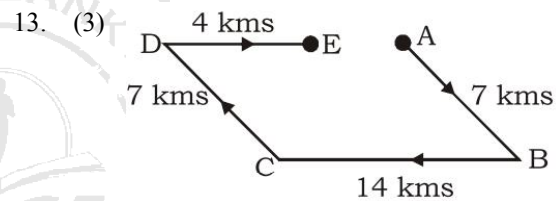
4. (1) As,  $121 = (5)^3 - 4$  and  $61 = (4)^3 - 3$   
 Also,  $337 = (7)^3 - 6$   
 $\therefore ? = (6)^3 - 5 = 211$

5. (3) A purse is used to hold money and an urn is used to hold ashes.  
 6. (4) All except chalk are obtained from crops.  
 7. (4) 4913 is a perfect cube whereas rest are perfect square.  
 8. (4) All except sharp are related to dimension.  
 9. (4) All except Agra are cities situated on the banks of river Ganga.

10. (4)  $\begin{matrix} F & I & K & D & G & I & M & P & R & K & N & Q \\ \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow \\ +3 & +2 & +3 & +2 & +3 & +2 & +3 & +2 & +3 & +3 \end{matrix}$

11. (3) Each row contains 12 plants  
 There are 11 gaps between the two corner trees i.e.  $(11 \times 2 = 22)$  meters and 1 metre is left on each side.  
 $\therefore$  Length of the garden =  $22 + 2 = 24$  m.

12. (1) There were all sparrows but six' means that six birds were not sparrows but only pigeons and ducks.  
 Similarly, Number of sparrows + number of ducks = 6  
 Number of sparrows + Number of pigeons = 6.  
 This is possible only when there are 3 sparrows, 3 pigeons and 3 ducks i.e. 9 birds in all.



Required distance =  $AE = 14 - 4 = 10$  kms

14. (3) The correct order is :  
 Plant Cotton Yarn Cloth Saree  
 $(2) \rightarrow (4) \rightarrow (1) \rightarrow (5) \rightarrow (3)$
15. (2) The terms of the given series are  $(2^2 - 1), (4^2 - 1), \dots, (8^2 - 1), (10^2 - 1), (12^2 - 1)$ .  
 So, missing term =  $(6^2 - 1) = (36 - 1) = 35$ .
16. (4) The pattern is  $+0, +3, +8, +15, \dots$  i.e.  
 $(1^2 - 1), + (2^2 - 1), + (3^2 - 1), + (4^2 - 1), \dots$   
 So, missing term =  $28 + (5^2 - 1) = 28 + 24 = 52$ .
17. (1) The colours adjacent to yellow are (orange, blue) and (red, pink). Hence violet will be opposite to yellow.
18. (1) Such decisions as given in the statement are taken only after taking the existing vacancies into consideration.  
 So, I implicit while II isn't.
19. (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.
20. (4)
21. (4)  $(15 \times 6) + 2 = 92$   
 $(7 \times 6) + 2 = 44$   
 $(7 \times 15) + 2 = 107$



57. (2) Unbroken tables =  $\frac{5}{6} \times 108 = 90$

Unbroken chairs =  $\frac{3}{4} \times 132 = 99$

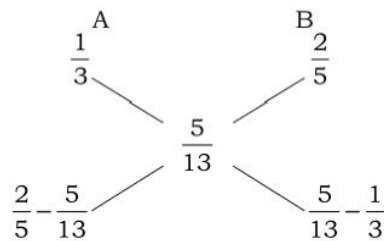
Unbroken pairs = 90

58. (1) In first alloy, zinc =  $\frac{1}{3}$

In second alloy, zinc =  $\frac{2}{5}$

In the new alloy, zinc =  $\frac{5}{13}$

By the rule of Alligation,



∴ Required ratio

$$= \left( \frac{2}{5} - \frac{5}{13} \right) : \left( \frac{5}{13} - \frac{1}{3} \right)$$

$$= \frac{26 - 25}{65} : \frac{15 - 13}{39} = \frac{1}{65} : \frac{2}{39} = \frac{1}{65} \cdot \frac{3}{3} : \frac{2}{39} = \frac{1}{5} : \frac{2}{3} = 3 : 10$$

59. (3) Let C.P = 1000

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

Profit =  $1150 - 920 = 230$

∴ Profit % when traders uses a watt of 920 g instead 66. (1)

of 1 kg =  $\left( \frac{230}{920} \times 100 \right) \% = 25\%$

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

61. (4) If average cost of 1 pen = ₹ x, then  
 $30x + 75 \times 2 = 510$

$$\Rightarrow 30x = 510 - 150 = 360 \Rightarrow x = \frac{360}{30} = ₹12$$

62. (2) Let the present age of son is x years.

Age of father = 42 years

ATQ,  $2x = 42$  years,

$x = 21$  years

∴ Age of son 5 years back was =  $21 - 5 = 16$  years

63. (3) Given CP of 40 books = ₹ 3200

According to the question,

SP of 40 books

= CP of 40 books + SP of 8 books

[∵ SP = CP + PROFIT]

SP of 32 books = ₹ 3200

[∵ CP of 40 books = 3200]

SP of 1 book = ₹ 100

SP of 1 dozen books = ₹ 1200

64. (3) Here,  $\sqrt[3]{175616} = 56$

$$\sqrt[3]{175.616} = 5.6$$

$$\sqrt[3]{0.175616} = 0.56 \text{ and } \sqrt[3]{0.000175616} = 0.056$$

∴ Required sum =  $5.6 + 0.56 + 0.056 = 6.216$

65. (2)  $\tan \theta = \frac{\sin \alpha - \cos \alpha}{\sin \alpha + \cos \alpha}$

$$\therefore 1 + \tan^2 \theta = 1 + \frac{(\sin \alpha - \cos \alpha)^2}{(\sin \alpha + \cos \alpha)^2}$$

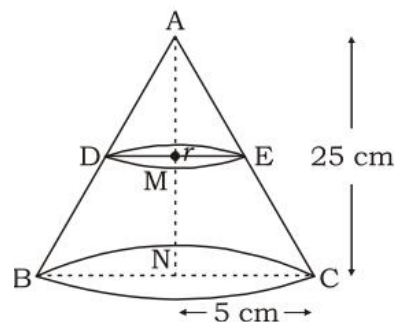
$$\Rightarrow \sec^2 \theta = \frac{(\sin \alpha + \cos \alpha)^2 + (\sin \alpha - \cos \alpha)^2}{(\sin \alpha + \cos \alpha)^2}$$

$$\Rightarrow \sec^2 \theta = \frac{2(\sin^2 \alpha + \cos^2 \alpha)}{(\sin \alpha + \cos \alpha)^2}$$

$$\Rightarrow \frac{1}{\cos^2 \theta} = \frac{2}{(\sin \alpha + \cos \alpha)^2}$$

$$\Rightarrow \frac{1}{\cos \theta} = \frac{\pm \sqrt{2}}{\sin \alpha + \cos \alpha}$$

$$\Rightarrow \sin \alpha + \cos \alpha = \pm \sqrt{2} \cos \theta$$



$\triangle ADE \sim \triangle ABC$

$$\therefore \frac{25 - h}{25} = \frac{r}{5}$$

$$\Rightarrow h = 25 - 5r \quad \dots(1)$$

Volume of frustum (V)

$$= \frac{1}{3} \pi [5^2 + r^2 + 5r]h$$

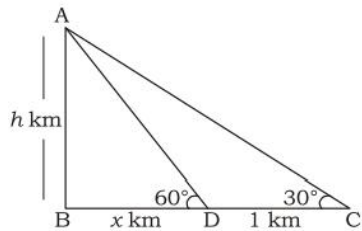
$$\Rightarrow 110 = \frac{1}{3} \pi [25 + r^2 + 5r](25 - 5r)$$

$$\Rightarrow \frac{5}{3} \pi [(5-r)(5^2 + r^2 + 5r)] = 110$$

$$\Rightarrow \frac{5}{3} \pi [5^3 - r^3] = 110 \Rightarrow 5^3 - r^3 = \frac{110 \times 3}{5\pi}$$

$$\Rightarrow 125 - r^3 = \frac{110 \times 3}{5 \times \frac{22}{7}} \Rightarrow r = (104)^{1/3} \text{ cm}$$

67. (1)



From  $\triangle ABD$

$$\tan 60^\circ = \frac{AB}{BD}$$

$$\Rightarrow \sqrt{3} = \frac{h}{x} \Rightarrow x = \frac{h}{\sqrt{3}} \text{ km}$$

From  $\triangle ABC$

$$\tan 30^\circ = \frac{AB}{BC}$$

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

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

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

68. (4)

Area of square = (side)<sup>2</sup>  
 = (24)<sup>2</sup> = 576 cm<sup>2</sup>  
 Area of rectangle = length × breadth  
 = 576 - 176 = 400 cm<sup>2</sup>

$$\therefore \text{Breadth of rectangle} = \frac{400}{24} = \frac{50}{3} = 16\frac{2}{3} \text{ cm}$$

69. (1)

$$\tan \theta = \frac{3}{4} \Rightarrow \tan^2 \theta = \frac{9}{16}$$

Expression

$$= \frac{4 \sin^2 \theta - 2 \cos^2 \theta}{4 \sin^2 \theta + 3 \cos^2 \theta}$$

$$= \frac{4 \frac{\sin^2 \theta}{\cos^2 \theta} - 2 \frac{\cos^2 \theta}{\cos^2 \theta}}{4 \frac{\sin^2 \theta}{\cos^2 \theta} + 3 \frac{\cos^2 \theta}{\cos^2 \theta}}$$

$$= \frac{4 \tan^2 \theta - 2}{4 \tan^2 \theta + 3} = \frac{4 \times \frac{9}{16} - 2}{4 \times \frac{9}{16} + 3}$$

$$= \frac{\frac{9}{4} - 2}{\frac{9}{4} + 3} = \frac{9 - 8}{9 + 12} = \frac{1}{21}$$

70. (2)

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

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

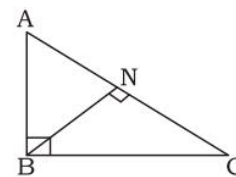
$$= \sqrt{\left(\frac{4x^2 + 1}{4x}\right)^2 - 1} = \sqrt{\frac{(4x^2 + 1)^2 - (4x)^2}{(4x)^2}}$$

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

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

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

71. (4)



In  $\triangle ABC$  &  $\triangle BNC$ ,  
 $\angle ABC = \angle BNC = 90^\circ$   
 and  $\angle C = \angle C$  (common)  
 $\therefore \triangle ABC \sim \triangle BNC$

$$\text{and } BC = \sqrt{10^2 - 6^2} = 8 \text{ cm}$$

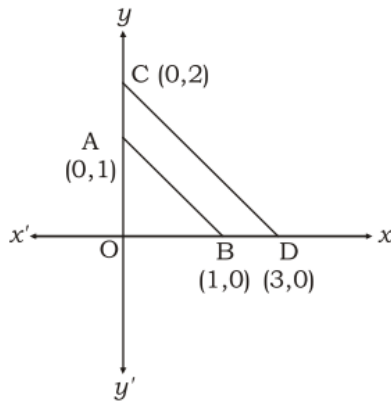
$$\therefore \frac{AC}{BC} = \frac{BC}{NC} \Rightarrow \frac{10}{8} = \frac{8}{NC}$$

$$\Rightarrow NC = 6.4$$

$$\therefore AN = 10 - 6.4 = 3.6$$

$$\therefore AN : NC = 3.6 : 6.4 = 9 : 16$$

72. (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 =  $\Delta OCD - \Delta OAB$

$$= \frac{1}{2} \times 3 \times 2 - \frac{1}{2} \times 1 \times 1$$

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

73. (3)

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

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

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

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

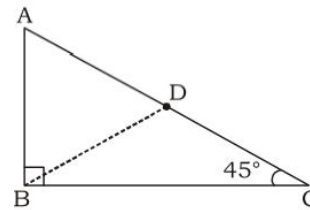
$$\Rightarrow \tan \theta - 1 = 0$$

$$\Rightarrow \tan \theta = 1$$

$$\therefore \cot \theta = 1 \Rightarrow \theta = 45^\circ$$

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

75. (1)



$BD = AD = CD$  (mid-point of hypotenuse is circumcentre.)

$$\therefore BD = \frac{1}{2}(4\sqrt{2}) = 2\sqrt{2} \text{ units}$$

76. (1) Substitute 'do you ?' by 'would you ?' 'would' is used for making a 'polite request' in an interrogative sentence.

77. (1) Remove 'the' before 'life'. In general meaning, 'life' should not be preceded by an article.

78. (2) Add 'to' before 'Australia'.

79. (4) Beside' means 'by the side of' or 'adjacent to'.

80. (1)

81. (2) If the two actions take place in the past, and an action preceded the other then the 1st action should be in past perfect tense.

82. (1) 'The long and short of something' is a phrase which means 'the substance or gist of the general situation without giving details'.

83. (2)

84. (2)

85. (1)

86. (3)

87. (2)

88. (1)

89. (1)

90. (4)

91. (2)

92. (2)

93. (4)

94. (3)

95. (2)

96. (3)

97. (3)

98. (1)

99. (2)

100. (2)