SSC CGL - 170606 GRAND TEST HINTS AND SOLUTIONS

ANSWER KEY

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

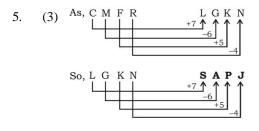
1. (2) The number of players in football is 11 wheares in waterpolo, we have 7 players.

 (3) Tiger is the national animal of India and snow leopard is the national animal of Afghanistan.

$$3. (2) 7! = 5040$$

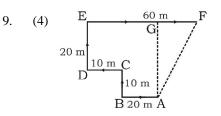
8! = 40320

4. (2) A moccasin is a type of shoe and an Aspis is a type of snake.





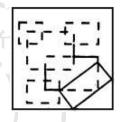
- 6. (2) Zail Singh was the President of India whereas rest three were the Prime Ministers of India.
- 7. (4) Except 1241, rest are the multiple of 13 where 1241, is a multiple of 17.
- 8. (4) Except D, the other letter can be drawn with the help of three lines whereas D requires 4 lines.



1

The movements of the person are from A to F, as shown in figure. Clearly, the final position is F which is to the North-East of the starting point A.

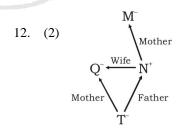
(4) On close observation, we find that figure contains figure (4) rotated through an angle of 135° as shown below:



Hence, the answer is (D).

1. (1) Required answer
$$=\frac{400}{4} - 3 = 97$$
 times.

Here, 3 has been subtracted as 100, 200 and 300 was not a leap year.



So, B is incorrect.

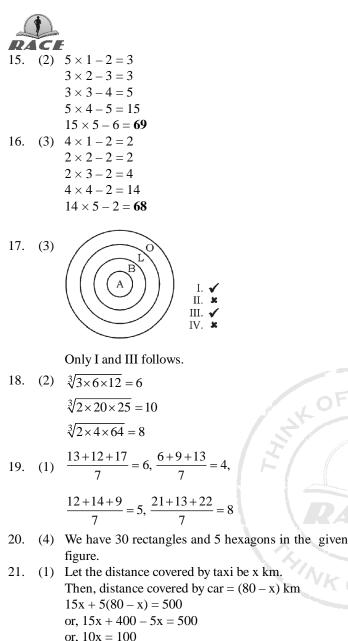
13. (3)
 14. (3) As given,

1

$$14 + 2 = 7$$

It means '+' = '÷'
So, $\sqrt{5+5+5+5+5}$

$$=\sqrt{5 \div 5 \div 5 \div 5} = \sqrt{5 \times \frac{1}{5} \times \frac{1}{5} \times \frac{1}{5} \times \frac{1}{5}}$$
$$= \frac{1}{5} \times \frac{1}{5} \sqrt{5} = \frac{1}{25} \times \sqrt{5} = \frac{2.2360}{25}$$



or,
$$x = 10$$

$$x = 10$$

 \therefore Distance covered by taxi = 10 km Hence, the answer is (1).

22. (2)

25. (2)

- 23. (1) As it is clear from the description, 'b' lies opposite 'd', 'c' lies opposite 'a' and 'f' lies opposite 'e'. So, when, 'c' is at the top, 'a' will be at the bottom.
- 24. (4) Let the number of bananas in the second bunch be x. Then, number of bananas in the first bunch

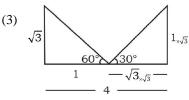
$$= x + \frac{1}{4}x = \frac{5}{4}x$$

So, $\frac{5}{4}x - x = 3 \Rightarrow 5x - 4x = 12 \Rightarrow x = 12$
∴ Number of bananas in first bunch $= \left(\frac{5}{4} \times 12\right) = 15$

2

51. (3) Area of four wall = $2 \times h(1 + b)$ = $2 \times 5 (16 + 11) = 270 \text{ m}^2$ Total area of gate and windows = $2 \times 1 + 1 \times 0.75 \times 4 = 2 + 3 = 5 \text{ m}^2$ Area to be painted = $270 - 5 = 265 \text{ m}^2$ \therefore Required cost = $265 \times 2.50 = \text{Rs.} 662.5$



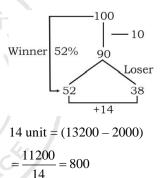


ATQ, $\therefore \sqrt{3} = 288 \text{ m (given)}$ and eagle flies for 24 seconds

$$\therefore \text{ speed of eagle} = \frac{288 \times 4}{\sqrt{3} \times 24} = 16\sqrt{3} \text{ m/sec.}$$

53. (3) Let the total votes be 100

ATQ,

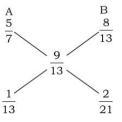


Votes polled for losing candidate = $800 \times 38 - 2000$ (invalid votes) = 28400 votes.

54. (1) Simple interest for 3 years = 76.51 - 1.51 = Rs.75

: Rate % =
$$\frac{75 \times 100}{1250 \times 3} = 2\%$$

- 55. (2) $4\sin^2\theta + 6(1 \sin^2\theta)$ = $4\sin^2\theta + 6 - 6\sin^2\theta = 6 - 2\sin^2\theta$ Now put the value of $\theta = 90^\circ$ $\therefore 6 - 2 = 4$
- 56. (1) C.P. of 30 kg = $30 \times 9.50 = \text{Rs}$. 285 C.P. of 40 kg = $40 \times 8.50 = \text{Rs}$. 340 Total C.P. of 70 kg = 285 + 340 = Rs. 625 S.P. of 70 kg = $70 \times 8.90 = \text{Rs}$. 623 Loss = Rs. 625 - Rs. 623 = Rs. 2
- 57. (1) From alligation-



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Ratio of quantity taken from vessel 63. (2) slant height A and vessel B = $\frac{1}{13}:\frac{2}{91}=7:2.$ $\therefore x = \frac{\sec \theta}{4}$ 5 5 58. (1) $\therefore 4x = \sec \theta$ and $\frac{4}{x} = \tan \theta$ $\therefore x = \frac{4}{\tan \theta}$ $8\left(x^{2}-\frac{1}{x^{2}}\right)=8\left(\frac{\sec^{2}\theta}{16}-\frac{1}{\frac{16}{x^{2}}}\right)$ 12 From Triplet $=8\left(\frac{\sec^2\theta}{16} - \frac{\tan^2\theta}{16}\right) = 8 \times \frac{1}{16} = \frac{1}{2}.$: S.A. = $\frac{1}{2} \times 40 \times 12 = 240 \text{ cm}^2$. 59. (2) $A \rightarrow 10$ 3 $B \rightarrow 15$ 30 2 $C \rightarrow 5$ 6 64. (3) Distance travelled by A = 2 × distance b/w two points × $\left(\frac{a}{a+b}\right)$ Total work by A + B in $4 \min = 20$ $= 2 \times 21 \times \frac{3}{7} = 18$ kms. Total work by A + B & C in $1 \min = -1$ \therefore Total time taken by C to empty the tank $=\frac{20}{1}=20$ min. 65. (3) 60. (1) x + y = 500...(1) Loss % = $\frac{(20)^2}{100}$ = 4% $\therefore 2\theta + 2x = 180^{\circ}$ Total loss = $\frac{500}{100} \times 4 = \text{Rs.}20$ $\therefore \theta + x = 90^{\circ}$ The value of $\angle T$ will be \therefore Selling price = 500 - 20 = Rs. 480 $\angle T + \theta + x = 180^{\circ}$ 61. (4) $\tan(4\theta - 50^\circ) = \cot(50^\circ - \theta)$ $\Rightarrow \angle T + 90^{\circ} = 180^{\circ} \Rightarrow \angle T = 90^{\circ}.$ $\tan(4\theta - 50^\circ) = \tan(90^\circ - (50^\circ - \theta))$ $\therefore 4\theta - 50^\circ = 90^\circ - (50^\circ - \theta)$ 66. (3) $3\theta = 90$ $\therefore \theta = 30$ 10 cm (2) Value of 1 radian = $\frac{180^{\circ}}{\pi}$ 62. 7 cm $\therefore \left(\frac{1}{2} + \frac{1}{3}\right) \text{ radian} = \frac{180^{\circ}}{\underline{22}} \times \frac{5}{6}$ Area of the plateform $\pi(r_0^2 - r_i^2)$ $\pi r^2 h = \pi (r_0^2 - r_i^2) \times H$ $=\frac{180^{\circ}}{22} \times 7 \times \frac{5}{6} = \left(\frac{525}{11}\right)^{\circ}$ \Rightarrow 7²×10 = (14² - 7²)×H :. Value of 3rd angle = $180^{\circ} - \frac{525^{\circ}}{11} = \frac{1455}{11} = 132\frac{3^{\circ}}{11}$ $\Rightarrow \frac{49 \times 10}{21 \times 7} = H \Rightarrow H = \frac{10}{2} m.$



67. (4)
$$\frac{x}{a} = (b-c), \frac{y}{b} = (c-a), \frac{z}{c} = (a-b)$$

if $a + b + c = 0$ then $a^3 + b^3 + c^3 = 3abc$
 $\therefore \frac{x}{a} + \frac{y}{b} + \frac{z}{c} = b - c + c - a + a - b = 0$
and $\left(\frac{x}{a}\right)^3 + \left(\frac{y}{b}\right)^3 + \left(\frac{z}{c}\right)^3 = \frac{3xyz}{abc}$
68. (4) $A = \tan 11^\circ \tan 29^\circ$
 $= \tan(90^\circ - 79^\circ)$? $\tan(90^\circ - 61^\circ)$
 $= \cot 79^\circ . \cot 61^\circ$
 $B = 2 \cot 61^\circ . \cot 79^\circ$
 $\therefore B = 2A$
69. (3) $\frac{\frac{1}{2}(a + b + c)[(a - b)^2 + (b - c)^2 + (c - a)^2]}{(a + b + c)}$
 $= \frac{1}{2}[(-4)^2 + (-3)^2 + (7)^2] = \frac{1}{2} \times 74 = 37.$
70. (1) ATQ,
 $x^2 + 1 + 2x + y^2 + 1 - 2y + z^2 = 0$
 $(x + 1)^2 + (y - 1)^2 + z^2 = 0$
 $\therefore x = -1, y = 1, z = 0$
Put the above value in equation-
 $3x + 5y + 6z = 3 \times -1 + 5 \times 1 + 6 \times 0 = -3 + 5 = 2.$
71. (4) Number of students enrolled in College A in the year
 $2009 = 1000$
 \therefore Number of students passed
80.

$$=1000 \times \frac{80}{100} \times \frac{60}{100} = 480$$

4

72. (3) Reqd. number of students
$$= 2290 \times \frac{70}{100} = 1603$$

73. (3) Average number of students enrolled in all colleges

together in the year 2010
$$=\frac{3770}{5}=754$$

Average number of students enrolled in all colleges

together in the year $2010 = \frac{3090}{5} = 618$

:. Reqd. ratio =
$$\frac{754}{618} = \frac{377}{309} = 377:309$$

(4) Number of students enrolled in College A in the year 74. 2009 = 1000

> Number of students enrolled in College B in the year 2011 = 650

:. Reqd. % =
$$\frac{350}{650} \times 100 = 53.84\% \approx 54$$

- (4) Total number of students in the year 2010 from all the colleges = 3090
 - ∴ Reqd. number of students
 - = 10% of 3090 = 309.
- (1) Replace 'will kill' by 'would kill'. The sentence is of conditional.
- (3) Replace 'or' by 'nor', as 'neither' is followed by 'nor'.
- (4)

76.

77.

78.

79.

80.

- (3) Replace 'isn't it' by 'didn't she?' as the question tag and the sentence must be in the same tense.
- (1) Sentence starting with 'Not only' takes inversion form. Thus, it should be as 'not only did the bandit rob the person'. The structure may also be 'The bandit not only robbed'

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