SSC CGL - 170732 GRAND TEST **HINTS AND SOLUTIONS**

ANSWER KEY

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

1. (1) Transacation of second is done through the first.

(1) The relation is $\sqrt{x} : (\sqrt{x} - 1)^3$ 2.

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

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

(1) A car runs on petrol whereas Television works by 3. Electricity.





- 5. (1) All except dog come under the category of cattle.
- 6. (4) Only 83 is a prime number.
- 7. (1) All except Record are the brief notation used in a language.
- 8. (1) All except Sparrow are flesh eating birds.
- 9. (3)

(4) We can find only one 'T' in GOVERNMENT ROCKS!. 10.

1. (4)
$$(101 + 15) - (43 + 35) = 116 - 78 = 38$$

 $(48 + 184) - (56 + 34) = 232 - 90 = 142$

12. (2)
$$16 \times 4 = 64 \Longrightarrow 6 - 4 = 2$$

 $9 \times 8 = 72 \Longrightarrow 7 - 2 = 5$
 $27 \times 3 = 81 \Longrightarrow 8 - 1 = 7$

3. (1) Consider
$$A = 1, B = 2 \dots, Z = 26$$

We have PRATAP = $16 - 18 - 1 - 20 - 1 - 16$
= 1618120116
So, NAVIN = $14 - 1 - 22 - 9 - 14$

- 14. (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.
- The pattern is: 15. (2) +1, +(1 + 2), +(1 + 2 + 3), +(1 + 2 + 3 + 4), +(1 + 2 + 3),3+4+5). So, required number = 15 + 10 = 25
- 16. (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.

17. (3) After interchanging the signs, we have $1\times9-3\div1\div3+1=1\times9-3\div3+1$ $= 1 \times 9 - 1 + 1$ =9 - 1 + 1 = 9

19. (1) Destination B 15 m 5 m 5 m 15 m 10 m A Starting 10 m point 5 m

Required distance = 5 m.



- 20. (1) Let the age of father and son be x and y respectively. $x - y = y \Longrightarrow x = 2y$ Now, x = 36
 - $\Rightarrow 2y = 36$ $\Rightarrow y = 18$
 - So, age of son 5 years ago = 18 5 = 13 yrs
- 21. (2) $\mathbf{c} \mathbf{c} \mathbf{a} \mathbf{c} \mathbf{c}' \mathbf{a} \mathbf{a} \mathbf{b} \mathbf{a} \mathbf{a} \mathbf{b} \mathbf{b} \mathbf{c} \mathbf{b} \mathbf{b} \mathbf{c} \mathbf{c}$

- 51. (1) The candidate at second place got = (100 - (55 + 5)) = 40% votes Difference between winner and second candidate at second place = (55 - 40) = 15%ATQ, $15\% \rightarrow 9000$ $100\% \rightarrow \frac{100}{15} \times 9000 = 60000$
- 52. (1) The given expression

$$=\frac{\frac{1}{3}\times3\times\frac{1}{3}}{\frac{1}{3}\div\left(\frac{1}{3}\times\frac{1}{3}\right)}-\frac{1}{9}=\frac{\frac{1}{3}}{\frac{1}{3}\div\frac{1}{9}}-\frac{1}{9}=\frac{\frac{1}{3}}{\frac{1}{3}\times9}-\frac{1}{9}$$

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

53. (1) C.P of shopkeeper = $Rs.\frac{20}{25}$

S.P of shopkeeper =
$$Rs.\frac{25}{20}$$

$$\therefore \text{ Profit \%} = \frac{\left(\frac{25}{20} - \frac{20}{25}\right)}{\frac{20}{25}} \times 100 = \frac{125 - 80}{100} \times 100 \times \frac{25}{20}$$

$$=\frac{45}{100}\times100\times\frac{25}{20}=56\frac{1}{4}\%$$

54. (3) Cost price of D

=

$$4000 \times \frac{90}{100} \times \frac{110}{100} \times \frac{120}{100} = Rs.4752$$

 \therefore Required difference = 4752 - 4000 = Rs. 752

55. (2) We have the formula as-

$$\frac{(2n-4)\times90}{n} = \frac{(2\times8-4)\times90}{8} = \frac{1080}{8} = 135^{\circ}$$



Height of hemispherical part

- = 7 cm = radius of hemispherical part
- ATQ,

57. (3)

- Radius of hemispherical part = height of the cone = 7 cm \therefore Volume of ice cream
- = Volume of cone + hemispherical part

$$= \frac{1}{3}\pi r^{2}h + \frac{2}{3}\pi r^{3} = \frac{1}{3}\pi r^{2}(h+2r)$$
$$= \frac{1}{3} \times \frac{22}{7} \times 7 \times 7(7+2\times7) = \frac{22\times7}{3} \times 21$$

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

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

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



CD = EF = 4.5 Cm 59. (1) 2x + 3y = 29 and y = x + 3Now, 2x + 3y = 29 $\Rightarrow 2x + 3(x + 3) = 29$ [Put the value of y] $\Rightarrow 2x + 3x + 9 = 29$ $\Rightarrow 5x = 20 \Rightarrow x = 4.$ 60. (3) ATQ, A : B : C Days $\Rightarrow x + 2 : x + 8 : x$

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Now from question condition,

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

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

61. (1) Let C.P of article = 100 unit

∴ Total profit

 $= 100 \times \frac{4}{5} \times \frac{15}{100} - 100 \times \frac{1}{5} \times \frac{10}{100} = 12 - 2 = 10 \text{ unit}$ Now ATQ, 10 unit \rightarrow Rs. 45

$$\therefore 100 \text{ unit} \rightarrow \frac{45}{10} \times 100 = Rs.450$$

62. (1) L(leak pipe) $\rightarrow 6 -5$

$$A + L \rightarrow 15$$
 -2 $\overrightarrow{}$ Capacity of tank

Efficiency of filling pipe = 3 units/hour

Required time to fill the tank = $\frac{30}{3}$ = 10 hours

ATQ, Tap (A) fill at the rate 10 litres per hour then capacity

of tank = $10 \times 10 = 100$ litres

63. (4) Sumit's present age = 2x years Prakash's present age = 3x years $\therefore 3x - 2x = 6$ x = 6

:. Required ratio
=
$$(2 \times 6 + 6)$$
 : $(3 \times 6 + 6) = 18 : 24 = 3 : 4$

64. (3) Let the sum be P. As the interest is compounded half-yearly. $\therefore R = 2\%, T = 2$ half years

$$\therefore A = P\left(1 + \frac{R}{100}\right)^{T}$$

$$\Rightarrow 7803 = P\left(1 + \frac{2}{100}\right)^{2} \Rightarrow 7803 = P\left(1 + \frac{1}{50}\right)^{2}$$

$$\Rightarrow 7803 = P \times \frac{51}{50} \times \frac{51}{50}$$

$$\Rightarrow P = \frac{7803 \times 50 \times 50}{51 \times 51} = Rs.7500.$$
65. (3) M + T + W + TH = 4 × 37 = 148°C ...(i)
TH + F + S + S = 4 × 41 = 164°C ...(ii)
M + T + ... + S + S = 7 × 39 = 273°C ...(iii)
 \therefore The temperature of the fourth day

$$= 148 + 164 - 273 = 39^{\circ}C$$

66. (3) By the method of Alligation,



$$= \frac{2000}{7+3} \times 7 = \frac{2000}{10} \times 7 = Rs.1400$$

- 67. (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 = $\frac{54}{5} = 10.8$.
 - (3) Let the required side of triangle be x cm.

$$\frac{x^2}{7^2} = \frac{256}{196} \Rightarrow x^2 = \frac{256 \times 49}{196} \Rightarrow x = 8 \text{ cm}$$

69. (4) H = 60 cm, radius = 32 cm Area of the curved surface = $\pi r l$

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

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

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

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

= Rs. 23.94 approximate

70. (1)

68.



Let the height of the tree be h and BP be x m.

$$\tan 45^{\circ} = \frac{h}{QB} \Longrightarrow 1 = \frac{h}{QB}$$

$$100 - x = h \qquad \dots(i)$$

$$\tan 30^{\circ} = \frac{h}{x} \Longrightarrow \frac{1}{\sqrt{3}} = \frac{h}{x}$$

$$x = \sqrt{3}h \qquad \dots(ii)$$



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From (i) and (ii), we get

$$100 - \sqrt{3}h = h \Longrightarrow h(\sqrt{3} + 1) = 100$$

$$\Rightarrow h = \frac{100}{\sqrt{3} + 1} \times \frac{\sqrt{3} - 1}{\sqrt{3} - 1} = \frac{100(\sqrt{3} - 1)}{2}$$

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),

$$\frac{360^{\circ}}{100} \times (30 - 15) = \frac{360^{\circ}}{100} \times 15 = 54^{\circ}$$

74. (2) Required percentage

$$=\frac{(15-10)}{15}\times100=\frac{5}{15}\times100=33.33\%$$

- 75. (3) From option (3), $\frac{360^{\circ}}{100} \times (20+5) = \frac{360^{\circ}}{100} \times 25 = 90^{\circ}.$
- 76. (2) Add 'the' before poor, as 'the poor' represents class of poor people.
- 77. (2) Remove 'had', when two actions take place subsequently, the first action which happened earlier will be in past perfect tense and the 2 nd action will be simple past tense.
- 88. (3) Since, this is a case of an unfulfilled wish, it will take 'had' as a main verb.
- An affirmative sentence starting with 'let's'/'let us' always takes 'shan't' as its question tag and pronoun 'we'.
- 90. (1) 'claims' are always 'tall', not 'bigger or high'.

