



SSC CGL - 180734 GRAND TEST
HINTS AND SOLUTIONS

ANSWER KEY

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

1. (2) Student follows the teacher and disciple follows the religious leader.

2. (1)
$$\begin{array}{cc} 182 & 342 \\ \downarrow & \downarrow \\ 13^2+13 & 18^2+18 \\ \underbrace{\hspace{10em}} & \underbrace{\hspace{10em}} \\ & 5 \end{array}$$

3. (3) As, A D H M
 $\downarrow \downarrow \downarrow \downarrow$ opposite
 Z W S N
 Similarly, C F J O
 $\downarrow \downarrow \downarrow \downarrow$ opposite
 X U Q L

4. (4) As smoke results pollution similarly battle results Destruction.

5. (3) Except Kohima, others are state.

6. (4)
$$\begin{array}{cccc} 117 & 13 & 162 & 18 & 171 & 19 & 304 & 16 \\ \underbrace{\hspace{2em}} & & \underbrace{\hspace{2em}} & & \underbrace{\hspace{2em}} & & \underbrace{\hspace{2em}} & \\ \times 9 & & \times 9 & & \times 9 & & \times 19 & \end{array}$$

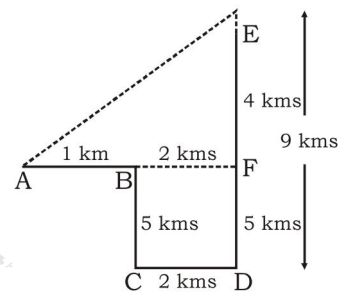
7. (1)
$$\begin{array}{cccc} A & C & D & F & T & U & O & P \\ \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow \\ +2 & & +2 & & +1 & & +1 & \end{array}$$

$$\begin{array}{cccc} H & I & V & W & F & G & I & J \\ \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow \\ +1 & & +1 & & +1 & & +1 & \end{array}$$

8. (3) Narmada falls in Arabian Sea where as the rest three falls in Bay of Bengal.

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

10. (3)



AF = 3 kms, EF = 4 kms

$$\therefore AE = \sqrt{3^2 + 4^2} = \sqrt{9 + 16} = \sqrt{25} = 5 \text{ kms}$$

So, he is 5 kms away from the starting point.

11. (3) Sunita's Grandfather's only son is his father and father's son is his brother.

12. (2) As, P A S S P O R T
 $\downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow$
 R C U U R Q T V
 So, B O O K L E T
 $\downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow$
 D Q Q M N G V

13. (2) $\frac{1}{2}, \frac{3}{4}, \frac{5}{8}, \frac{7}{16}, \frac{9}{32}, \frac{11}{64}, ?$

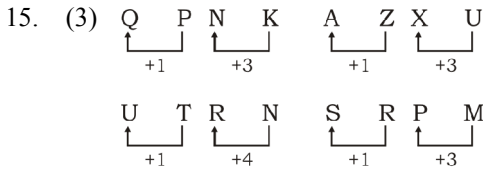
Here we have two series-

1st series:- 1, 3, 5, 7, 9, 11, 13
 $\downarrow \downarrow \downarrow \downarrow \downarrow \downarrow$
 $+2 +2 +2 +2 +2 +2$

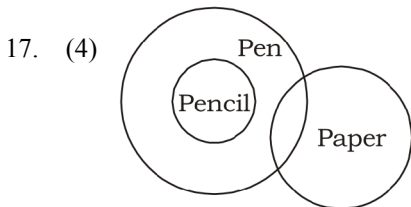
2nd series:- 2, 4, 8, 16, 32, 64, 128
 $\downarrow \downarrow \downarrow \downarrow \downarrow \downarrow$
 $\times 2 \times 2 \times 2 \times 2 \times 2 \times 2$

So next term is $\frac{13}{128}$.

14. (1) $Z = 52 = 2 \times (26)$ → actual position in english alphabet
 $ACT = 2 \times (1 + 3 + 20)$ → actual position in english alphabet
 $= 2 \times 24 = 48$
 $EAT = 2 \times (5 + 1 + 20)$ → actual position in english alphabet
 $= 2 \times 26 = 52$



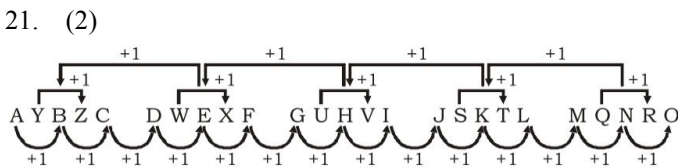
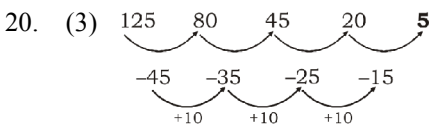
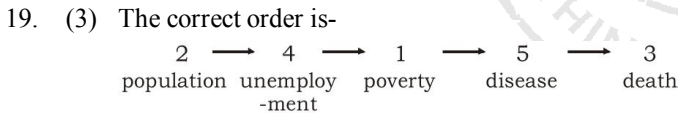
16. (4) Number of people who know all three subjects = 100
 Number of people who know only civics = 170
 \therefore Required Ratio = $\frac{100}{170} = \frac{10}{17}$



I. ✓
 II. ✓

Both (I) & (II) follow.

18. (4) The word 'COMMUNICATE' can't be formed from the word 'RECOMMENDATION' as we can't find the word 'U' in RECOMMENDATION.



22. (4)

3	4	5	} ×2
6	8	10	
216	512	?	⇒ x ³ = 216, 512, 1000

So, ? = 1000

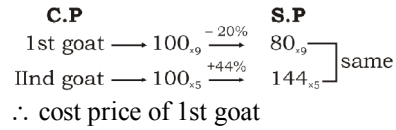
23. (2) We can observe from the given diagram that number 3 represents indian professors who are also lawyers.

24. (3) Given equation:-
 $8 \times 2 + 3 - 5 = 21$
 let us change '×' 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. (3) Selling price = $60 \times \frac{115}{100} \times \frac{120}{100} = ₹ 82.8$

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



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

53. (4) Let the time taken by 3 men = x days
 Time taken by 9 women = x + 5 days
 3m = x day

2m = $\frac{3x}{2}$ days

Similarly, 9w = x + 5 days

3w = 3(x + 5) days

ATQ,

$\frac{2}{3x} + \frac{1}{3(x+5)} = \frac{1}{6} \Rightarrow \frac{2x+10+x}{3x(x+5)} = \frac{1}{6}$

⇒ 18x + 60 = 3x² + 15x ⇒ 3x² - 3x - 60 = 0

⇒ x² - x - 20 = 0 ⇒ x = 5

Time taken by 1 man = 3x = 3 × 5 = 15 days

Time taken by 1 women = 9(x + 5) = 90 days

Required output = 6 times

54. (2) Let the given number be x.

Then,

$\left(x \times \frac{3}{2}\right) - \left(x \div \frac{3}{2}\right) = 10$

⇒ $\frac{3}{2}x - \frac{2}{3}x = 10 \Rightarrow \frac{9x - 4x}{6} = 10$

⇒ 5x = 60 ⇒ x = 12

55. (2) SI = ₹ (7200 - 6000) = ₹ 1200

∴ SI = $\frac{P \times R \times T}{100} \Rightarrow 1200 = \frac{6000 \times R \times 4}{100}$

⇒ R = $\frac{1200 \times 100}{6000 \times 4} = 5\%$

New rate of R = 5 × 1.5 = 7.5%

Then, SI = $\frac{6000 \times 7.5 \times 5}{100} = ₹ 2250$

∴ Amount = ₹ (6000 + 2250) = ₹ 8250

56. (3) Let the principal be x

∴ Principal SI = $\frac{7x}{4}$

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

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

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

57. (4) Average of 9 consecutive no. = n
 ∴ Fifth number = n
 Tenth number = n + 5
 Eleventh number = n + 6

$$\text{New average} = \frac{9n + n + 5 + n + 6}{11}$$

$$= \frac{11n + 11}{11} = \frac{(n+1) \times 11}{11} = n + 1$$

58. (3) Pipe A can fill a tank = 20 minutes
 Let the efficiency of pipe A = 100
 Then the efficiency of 5 new pipes

$$= 100 \times \frac{20}{100} \times 5 = 100$$

$$M_1 D_1 = M_2 D_2$$

$$\Rightarrow 20 \times 100 = 100 \times D_2$$

$$\Rightarrow D_2 = 20 \text{ min}$$

59. (3) Let the number be x.

Then,

$$x^2 = (75.15)^2 - (60.12)^2$$

$$= (75.15 + 60.12)(75.15 - 60.12)$$

$$= 135.27 \times 15.03 = 2033.1081$$

$$\therefore x = \sqrt{2033.1081} = 45.09$$

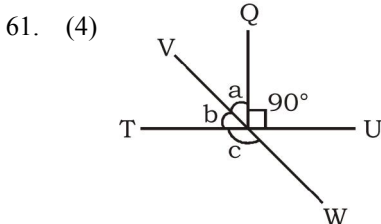
60. (3)
- | | | |
|---------------|----------|----------|
| Dog | : | Cat |
| Leap/min | 5 | 4 |
| Distance/leap | 8 m | 5 m |
| Speed | 40 m/min | 20 m/min |

Relative speed = 20 m/min

Actual distance b/w cat & dog = 50 × 8 = 400 m

Time taken by dog = $\frac{400}{20} = 20 \text{ min}$

Distance travelled by dog = 20 × 40 = 800 m



$$\angle a = 36^\circ$$

$$\angle b = 54^\circ$$

$$\therefore \text{value of } \angle c = 180^\circ - \angle 54$$

$$\Rightarrow \angle c = 126^\circ$$

62. (2) Teacher's age
 = 16 × 10 - 19 × 4 - 5 × 10
 = 160 - 76 - 50 = 34 years

63. (3) Let the numbers be x, y and z.
 Then,
 x : y = 2 : 3

$$y : z = 5 : 8$$

$$\therefore x : y : z = 2 \times 5 : 3 \times 5 : 3 \times 8 = 10 : 15 : 24$$

Sum of the ratios = 10 + 15 + 24 = 49

$$\therefore \text{The second number} = \frac{15}{49} \times 98 = 30$$

64. (1) In 400 gm of alloy.

$$\text{Zinc} = \frac{5}{8} \times 400 = 250 \text{ gm}$$

$$\text{Copper} = \frac{3}{8} \times 400 = 150 \text{ gm}$$

x gm of copper be mixed, then

$$\frac{250}{150 + x} = \frac{5}{4} \Rightarrow 750 + 5x = 1000$$

$$\Rightarrow 5x = 1000 - 750 = 250 \Rightarrow x = 50 \text{ gm}$$

65. (2) Given 5N = 15R

$$N : R = 3 : 1 \text{ \& } 10R = 20K$$

$$R : K = 2 : 1$$

$$N : R : K$$

$$3 : 1 : 2$$

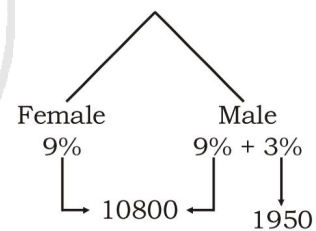
$$\frac{6 : 2 : 1}{2 : 1}$$

$$\frac{6 : 2 : 1}{\times 2000} \quad \frac{1}{\times 2000}$$

$$12000 : 4000 : 2000$$

Nitya's income = 12000

66. (4) Total population → 120000



Total population of male = 65000

∴ No. of females = 67750

∴ Required Diff. = 2750

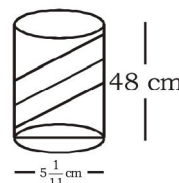
67. (3) AB || CD || PQ (Given)

Let AB = a, PQ = b, CD = c

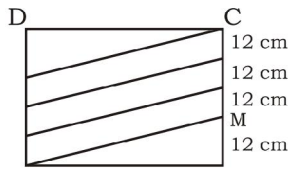
$$\therefore \frac{1}{b} = \frac{1}{a} + \frac{1}{c} \Rightarrow \frac{1}{b} = \frac{1}{12} + \frac{1}{8} \Rightarrow \frac{1}{b} = \frac{3+2}{36}$$

$$\Rightarrow \frac{1}{b} = \frac{5}{36} \Rightarrow b = \frac{36}{5} \text{ cm}$$

68. (1)



when we open it



A — 16 cm — B
the base circumference

$$= 2\pi r = 2 \times \frac{22}{7} \times \frac{56}{11} \times \frac{1}{2} = 16 \text{ cm}$$

∴ AM = length of one complete turn

$$= \sqrt{16^2 + 12^2} = 20 \text{ cm}$$

∴ total length = $4 \times 20 = 80 \text{ cm}$

69. (4) Given $\frac{P^2 - 4P + 4}{4P} = 8$

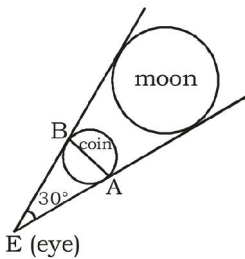
$$= \frac{P^2 - 4P + 4}{P} = 32$$

$$= \frac{P^2}{P} - \frac{4P}{P} + \frac{4}{P} = 32$$

$$\Rightarrow P - 4 + \frac{4}{P} = 32$$

$$\Rightarrow P + \frac{4}{P} = 36$$

70. (2)



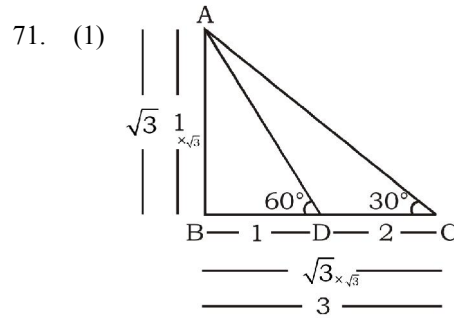
$$\theta = 30^\circ = \left(\frac{30}{60}\right)^\circ = \left(\frac{1}{2}\right)^\circ$$

$$= \left(\frac{1}{2} \times \frac{\pi}{180}\right)^C = \left(\frac{\pi}{360}\right)^C$$

$$\theta = \frac{\text{Arc}}{\text{radius}} = \frac{\pi}{360} = \frac{4.4}{r}$$

$$\Rightarrow r = \frac{4.4 \times 360}{\pi} \text{ cm} = \frac{4.4 \times 360}{22} \times 7$$

$$r = 504 \text{ cm}$$



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

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

72. (1) $\therefore x = \frac{1}{y}$

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

ATQ,

$$\frac{x^2 + y^2}{x^3 + y^3} = \frac{x^2 + \frac{1}{x^2}}{x^3 + \frac{1}{x^3}} = \frac{14}{52} = \frac{7}{26}$$

73. (3) Let $a = b = c = 2$, then $2s = 6 \Rightarrow s = 3$
 $\therefore (s-a)^3 + (s-b)^3 + 3(s-a)(s-b)c$
 $= (3-2)^3 + (3-2)^3 + 3(3-2)(3-2) \times 2$
 $= 1 + 1 + 3 \times 2 = 8 = c^3$

74. (3) Formula: $-(B)^3 + 3(B)^2 - (B)^1 + (B)^2$
 $= B \text{ denotes base} = 2$
 $= (2)^3 + 3(2)^2 - (2)^1 + (2)^2$
 $= 8 + 12 - 2 + 4 = 22 + 26$
 $= 48$

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

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

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

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

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

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

From options-

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

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