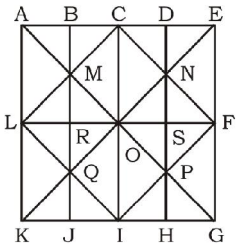
SSC CGL - 180612 GRAND TEST
HINTS AND SOLUTIONS

ANSWER KEY

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

1. (1) $363 = 3 + 6 + 3 = 12 = 1 + 2 = 3$
$572 = 5 + 7 + 2 = 14 = 1 + 4 = 5$
2. (1) The first two letters are written in reverse order in the second term. The third letter is replaced by a letter occupying the same position from the end of the alphabet.
3. (3) Second can be obtained by moving 135° in clockwise direction from first.
4. (2) The first, Third, Fifth and Seventh letters are moved one step backward to obtain the corresponding letters and rest of the letters are same.
5. (4) All except Chocolate are baked items.
6. (2) All except (2) are insects having six legs.
7. (3) Sum of digits in each number except (3) is 28.
8. (3) In all other pairs the ratios is 8 : 9.
9. (3) Letters A L G U T
Digits 2 3 5 4 9
10. (4) The letter 'V' of REPRIEVE is not present in DEPRECIATE.
11. (1) $(9 + 8) – (4 + 4) = 17 – 8 = 9$
$(11 + 5) – (3 + 3) = 16 – 6 = 10$
$(7 + 16) – (6 + 5) = 23 – 11 = 12$
12. (2) $8 + 7 = 15$ and $2 \times 15 = 30$
$1 + 7 = 8$ and $3 \times 8 = 24$
$6 + 12 = 18$ and $2 \times 18 = 36$
13. (4) Let number of horses = number of men = x.
Then, number of legs $= 4x + 2 \times \frac{x}{2} = 5x$.
So, $5x = 90$ or $x = 18$
So, there are $(18 + 18) = 36$ horses and men in total.
14. (2) A 'tractor' is used to plough a field.
But a 'tractor' is called 'car'.
So, a 'car' will be used to plough a field.
15. (3) From the given information, we have-
Gopal > Raman > Madan
Amar > Sripal > Gopal
Tarun > Amar > Varun
Combining all the above, we get
Tarun > Amar > Sripal > Gopal > Raman > Madan
Position of Varun will be somewhere after Amar, but it is not fixed as relation of Varun with anyone is not given. Hence, Tarun is the strongest.
16. (3) The sequence is-
$1 \times 2, 2 \times 3, 3 \times 4, 4 \times 5, 5 \times 6, 6 \times 7, 7 \times 8, 8 \times 9$.
So, required answer $= 8 \times 9 = 72$
17. (4) P is on the left of O i.e. P, O.
N is on the right of Q i.e. Q, N.
M is on the right of O i.e. O, M.
N is on the left of P i.e. N, P.
From the above statements, the correct order is : Q, N, P, O M.
Clearly, P is sitting in the centre.
18. (4) After exchanging the signs we have,
Given expression $= \frac{(36 - 4) \div 8 - 4}{4 \times 8 - 2 \times 16 + 1}$
$= \frac{(32 \div 8 - 4)}{(32 - 32 + 1)} = 0$
19. (2)



The horizontal lines are AK, BJ, CI, DH and EG i.e. 5 in number.
The vertical lines are AE, LF and KG i.e. 3 in number.
The slanting lines are LC, CF, FI, LI, EK and AG i.e. 6 in number.
Thus, we require $5 + 3 + 6 = 14$ straight lines to make the given figure.

20. (1) Only conclusion I follows.

21. (2) According to Rahul, the brother's birthday is on one of the days among 16 th and 17 th February.
According to Soumya, the brother's birthday is on one of the days among 17 th and 18 th February.
Clearly, Rahul's brother's birthday is on the day common to both the above groups i.e., 17 th February.
Hence, the answer is (2).

22. (4) aa/ b b/aa a/ bbb/ a aaa/ b bbb/ a

23. (4) Clearly, the last train left two and a half hours before 18:00 hours i.e. at 15:30 hours. But this happened 40 minutes before the announcement. So, the announcement was made at 16 : 10 hours.

24. (4) 

25. (4) 

51. (2) Let the height of the building x metres.
Less lengthy shadow, less in the height (Direct proportion)
$\therefore$ 40.25 : 28.75 : : 17.5 : x
$\Rightarrow 40.25 \times x = 28.75 \times 17.5$

$$\Rightarrow x = \frac{28.75 \times 17.5}{40.25} = 12.5$$

52. (3) Let the distance travelled by x km.
Then,

$$\frac{x}{10} - \frac{x}{15} = 2$$

$\Rightarrow 3x - 2x = 60 \Rightarrow x = 60$ km
Time taken to travel 60 km at 10 km/hr

$$= \left(\frac{60}{10}\right) \text{hrs} = 6 \text{ hrs.}$$

So, Vivek started 6 hours before 2 P.M. i.e., at 8 A.M.

$$\therefore \text{ Required speed } = \left(\frac{60}{5}\right) \text{km/hr.} = 12 \text{km/hr.}$$

53. (2) C's 1 day's work

$$= \frac{1}{3} - \left(\frac{1}{6} + \frac{1}{8}\right) = \frac{1}{3} - \frac{7}{24} = \frac{1}{24}$$

A's wages : B's wages : C's wages

$$= \frac{1}{6} : \frac{1}{8} : \frac{1}{24} = 4 : 3 : 1.$$

$$\therefore \text{ C's share (for 3 days) } = ₹\left(3 \times \frac{1}{24} \times 3200\right) = ₹400$$

54. (2) C.P. of 56 kg rice = ₹ (26 × 20 + 30 × 36)
= ₹ (520 + 1080) = ₹ 1600
S.P. of 56 kg rice = ₹ (56 × 30) = ₹ 1680

$$\therefore \text{ Gain } = \left(\frac{80}{1600} \times 100\right)\% = 5\%$$

55. (4) Ratio of initial investments

$$= \left(\frac{7}{2} : \frac{4}{3} : \frac{6}{5}\right) = 105 : 40 : 36.$$

Let the initial investments be 105x, 40x and 36x.

$$\therefore \text{ A : B : C } = \left(105x \times 4 + \frac{150}{100} \times 105x \times 8\right) : (40x \times 12) : (36x \times 12)$$
$$= 1680x : 480x : 432x = 35 : 10 : 9$$

$$\text{Hence, B's share } = ₹\left(21600 \times \frac{10}{54}\right) = ₹4000$$

56. (3) $\dfrac{4x-3}{x} + \dfrac{4y-3}{y} + \dfrac{4z-3}{z} = 0$

$$\Rightarrow \frac{4x}{x} - \frac{3}{x} + \frac{4y}{y} - \frac{3}{y} + \frac{4z}{z} - \frac{3}{z} = 0$$

$$\Rightarrow \frac{3}{x} + \frac{3}{y} + \frac{3}{z} = 4 + 4 + 4 = 12 \Rightarrow \frac{1}{x} + \frac{1}{y} + \frac{1}{z} = \frac{12}{3} = 4.$$

57. (1) $2x + 3x + 5x = 180° - 45° = 135$
$\Rightarrow 10x = 135°$

$$\Rightarrow x = \frac{135}{10} = \frac{27}{2}$$

$$\therefore \text{ Largest angle } = 5x + 15° = \left(5 \times \frac{27}{2}\right)^\circ + 15°$$

$$= \frac{135 + 30}{2} = \frac{165°}{2}$$

$\because 180° = \pi$ radian

$$\therefore \frac{165°}{2} = \frac{\pi}{180} \times \frac{165}{2} = \frac{11\pi}{24} \text{ radian}$$

58. (2) Let C.P. = ₹ 100,
Then, Profit = ₹ 320, S.P. = ₹ 420
New C.P. = 125% of ₹ 100 = ₹ 125
New S.P. = ₹ 420
Profit = ₹ (420 – 125) = ₹ 295
$\therefore$ Required percentage

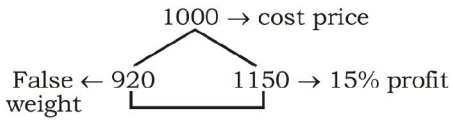
$$= \left(\frac{295}{420} \times 100\right)\% = \frac{1475}{21}\% = 70\% \text{ (approx.)}$$

59. (1) Let the present ages of Sameer and Anand be 5x years and 4x years respectively.

Then, $\dfrac{5x+3}{4x+3} = \dfrac{11}{9}$

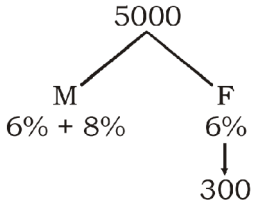
$\Rightarrow 9(5x + 3) = 11(4x + 3)$
$\Rightarrow 45x + 27 = 44x + 33$
$\Rightarrow 45x - 44x = 33 - 27$
$\Rightarrow x = 6$
$\therefore$ Anand's present age = 4x = 24 years.

60. (3)



$\therefore$ Required % $= \frac{230}{920} \times 100 = \frac{2300}{92} = 25\%$ profit

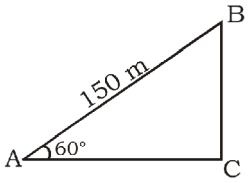
61. (4)



8% = 200
Total no. of females = 2500

62. (2) $\angle AOC = \angle BOD = 31°$ (vertically opposite)
$\therefore \angle BOC = 180° - \angle AOC = 149°$

63. (2)



AB = Length of the thread = 150 metre
$\angle BAC = 60°$
In ΔABC,

$\sin 60° = \frac{BC}{AB} \Rightarrow \frac{\sqrt{3}}{2} = \frac{BC}{150}$

$\Rightarrow BC = 150 \times \frac{\sqrt{3}}{2} = 75\sqrt{3}$ metre

64. (1) Speed of flowing water = 12 cm/s
Time = one hour = 3600 seconds
Quantity of water pumped out through pipe in one second $= \pi \times \left(\frac{7}{2}\right)^2 \times 12 \text{ cm}^3$

Total quantity in 1 hour

$= \pi \times \left(\frac{7}{2}\right)^2 \times 12 \times 3600 \text{ cm}^3$

$= \frac{22}{7} \times \frac{7 \times 7 \times 12 \times 3600}{4 \times 1000} l = 1663.2\ l$

65. (1) Let the sum invested in Scheme A be ₹ x and that in Scheme B be ₹ (13900 – x).

Then, $\left(\frac{x \times 14 \times 2}{100}\right) + \left(\frac{(13900 - x) \times 11 \times 2}{100}\right) = 3508$

$\Rightarrow 28x - 22x = 350800 - (13900 \times 22)$
$\Rightarrow 6x = 45000$
$\Rightarrow x = 7500$
So, sum invested in Scheme B
= ₹ (13900 – 7500) = ₹ 6400

66. (3) Let total no. of voting list = 100x
Total votes polled = 90x
Valid votes = 90x – 1200
Winner gets votes = 68x
So, loser gets votes = (90x – 1200) – 68x = 22x – 1200
So, according to the question,
68x – (22x – 1200) = 56400
46x + 1200 = 56400
46x = 56400 – 1200

$x = \frac{55200}{46}$

Votes in favour of losing candidate

$= 22 \times \frac{55200}{46} - 1200 = 25200$

67. (3) Area of the base = 40 × 40 = 1600 cm^2
We know, Volume of pyramid

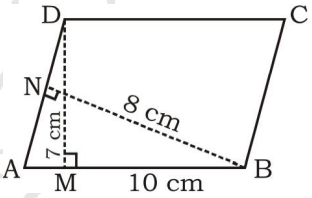
$= \frac{1}{3} \times$ area of base × height

$\Rightarrow 8000 = \frac{1}{3} \times 1600 \times h \Rightarrow h = \frac{8000 \times 3}{1600} = 15$ cm

68. (4) Expression = (x – 2) (x – 9)
$= x^2 - 11x + 18 = ax^2 + bx + c$

Minimum value $= \frac{4ac - b^2}{4a} = \frac{4 \times 1 \times 18 - 121}{4} = \frac{-49}{4}$

69. (3)



Area of ||gm = Base × Height
$\therefore$ ar(||gm ABCD) = AB × DM = (10 × 7) cm^2 ...(i)
Also, ar(||gm ABCD) = AD × BN
= (AD × 8) cm^2 ...(ii)
From (i) and (ii), we have,
10 × 7 = AD × 8

$\Rightarrow AD = \frac{35}{4} = 8.75$ cm

70. (2) Radius of circular wire $= \frac{42}{2} = 21$ cm

Circumference of wire = $2\pi r = 2 \times \frac{22}{7} \times 21 = 132$ cm

Let the length and breadth of rectangle be 6x and 5x respectively.
$\therefore$ Perimeter of rectangle = 2(6x + 5x) = 22x
According to the question,

$22x = 132 \Rightarrow x = \frac{132}{22} = 6$

$\therefore$ Length of rectangle = 6x = 6 × 6 = 36 cm
Breadth of rectangle = 5x = 5 × 6 = 30 cm
$\therefore$ Area = 36 × 30 = 1080 cm^2

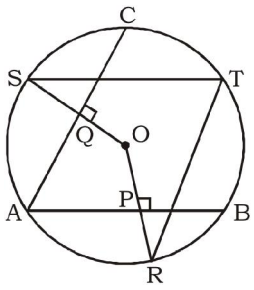
71. (1) $15\% = \frac{3}{20}, 10\% = \frac{1}{10}, 5\% = \frac{1}{20}$

Actual	Remain
20	17
10	9
20	19
4000	2907
↓×5	↓×5
20,000	**14535**

72. (3) $x + y + z = 13$
$x^2 + y^2 + z^2 = 69$
$(x + y + z)^2 = x^2 + y^2 + z^2 + 2(xy + yz + zx)$
$\Rightarrow (13)^2 = 69 + 2(xy + yz + zx)$
$\Rightarrow 2(xy + yz + zx) = 169 - 69 = 100$

$\Rightarrow xy + yz + zx = \frac{100}{2} = 50.$

73. (2)



$\angle OQA = \angle OPA = 90°$
$\angle QOP + \angle QAP = 180°$
$\Rightarrow \angle QOP = \angle SOR = 2 \angle STR$
$\Rightarrow \angle QOP = \angle SOR = 2\angle STR$

$\therefore \angle RTS = \frac{148}{2} = 74°$

74. (3) $p + \frac{1}{4}\sqrt{p} + k^2 = (\sqrt{p})^2 + 2 \cdot \sqrt{p} \cdot \frac{1}{8} + \left(\frac{1}{8}\right)^2 - \left(\frac{1}{8}\right)^2 + k^2$

$\Rightarrow k^2 = \left(\frac{1}{8}\right)^2 \Rightarrow k = \pm\frac{1}{8}$

75. (1) $\cos(180° + A) + \cos(180° + B) + \cos(180° + C) + \cos(180° + D)$
$= -\cos A - \cos B - \cos C - \cos D$
$= -\cos(180° - C) - \cos(180° - D) - \cos C - \cos D$
$[\because A + C + = B + D = 180°$ cyclic quadrilateral$]$
$= \cos C + \cos D - \cos C - \cos D$
$= 0$

76. (3) 'Different' will take 'from' after it.

77. (2) 'Averse' will take 'to'. 'Averse to hard work' means 'not liking hard work or not wanting to work hard'.

78. (2) Replace 'besides' with 'beside'. 'Besides' means 'in addition to something/ somebody'.

84. (3) Repel

90. (3) Replace 'did' by 'as'. 'As soon as' is a co-relative conjunction.