

SSC CGL - 170604 GRAND TEST
HINTS AND SOLUTIONS

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

1. (2) Inch is smaller unit than Yard. Similarly, Ounce is smaller unit than Quart.

2. (2)
$$\begin{array}{cccc} & +1 & & +3 \\ & \downarrow & & \downarrow \\ 7 & 8 & 10 & 13 \\ & +2 & & +4 \\ & \downarrow & & \downarrow \\ & 17 & 18 & 20 & 23 \end{array}$$

G H J M : Q R T W : :

$$\begin{array}{cccc} & +1 & & +3 \\ & \downarrow & & \downarrow \\ 3 & 4 & 6 & 9 \\ & +2 & & +4 \\ & \downarrow & & \downarrow \\ & 13 & 14 & 16 & 19 \end{array}$$

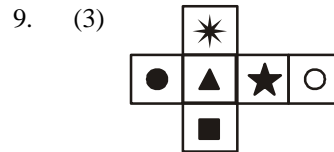
C D F I : M N P S

3. (2) 'R' is the middle letter in 'ARE', similarly 'U' is the middle letter in 'IUE'.

4. (1) $23 : 08 \ 27 :: 45 : 64 \ 125$
$$\begin{array}{ccc} \downarrow & \downarrow & \downarrow \\ 2^3 & 3^3 & 4^3 \\ \downarrow & \downarrow & \downarrow \\ 3^3 & 4^3 & 5^3 \end{array}$$

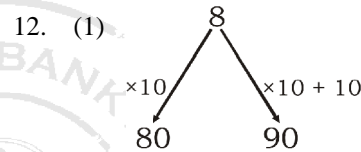
5. (2) All except (2) are way of seeing life.

6. (4) Except PERU, rest of the words have first and last letter as vowels.
7. (3) All except (3) have difference of 17.
8. (4) The year 2006 is an ordinary year. So, it has 1 odd day. So, the day on 8th Dec, 2007 will be 1 day beyond the day on 8th Dec, 2006. But, 8th Dec, 2007 is Saturday. \therefore 8th Dec, 2006 is Friday.

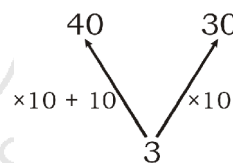


So, \blacktriangle/\bigcirc , \ast/\blacksquare and \bullet/\blackstar are opposite to each other.

10. (2) 2, 1, 4, 3
11. (4) D is not present in word GEOSTATIONARY.



Following the same pattern, we have -



13. (3) $1 + 4 + 7 + 4 = 16 = 4^2 = 4$ (mid term)
 $4 + 1 + 3 + 1 = 9 = 3^2 = 3$ (mid term)
 $5 + 6 + 6 + 8 = 25 = 5^2 = 5$ (mid term)
14. (3) $5^2 + 9^2 + 4^2 = 18 = [5 + 9 + 4]$
 $6^2 + 3^2 + 7^2 = 16 = [6 + 5 + 7]$
 $8^2 + 2^2 + 10^2 = 20 = [8 + 2 + 10]$

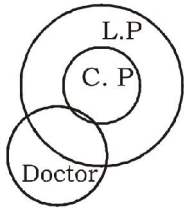
15. (4) L A C K = 396
 $12 \times 1 \times 3 \times 11$
B A C K = 66
 $2 \times 1 \times 3 \times 11$

16. (2)
$$\begin{array}{cccc} & -1 & & -2 & & -3 \\ & \downarrow & & \downarrow & & \downarrow \\ E & Z & F & Y & H & W & K & T \\ & +1 & & +2 & & +3 \end{array}$$

17. (3)
$$\begin{array}{cccccc} 1 & 5 & 21 & 57 & 121 & 221 \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ +4 & +16 & +36 & +64 & +100 \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ 2^2 & (4)^2 & (6)^2 & (8)^2 & (10)^2 \end{array}$$

18. (2) The girl is the daughter of the sister of Rahul's father. Hence, the girl is the cousin or Rahul is the cousin of the girl.

19. (3) Both I & II follows



20. (3) aba/aba/aba/aba

21. (3) G A M B L E
 ↓ -1 ↓ +1 ↓ -1 ↓ +1 ↓ -1 ↓ +1
 F B L C K F

Similarly,

F L O W E R
 ↓ -1 ↓ +1 ↓ -1 ↓ +1 ↓ -1 ↓ +1
E M N X D S

22. (3)

23. (2)

24. (1)

25. (2)

26. (4)

27. (4) The President of India is elected by the system of proportional representation by means of the single transferable vote. The election to the President of India is an indirect election. The people do not elect the President directly. He is elected by MPs & MLAs who are in turn elected by people. The voting is done in the form of preferences. Winning candidate should get 50 % of first preferential votes + 1. Least preferred candidate is eliminated after every round and votes are re- distributed till a clear winner emerges. Hence, he also secures the majority of votes polled.

28. (2)

29. (4) All the options are the features of the Indian Parliament. But the most important feature is that its upper house (Rajya Sabha) never dissolves.

30. (3) Passive factor of production is the factor which cannot be productive without the help of the other factors of production. Land and Capital, both alone cannot be productive. Hence, both are passive factor of production.

31. (2) Lord Mayo served as 4th Viceroy of India from 12 January 1869 to 8 February 1872. In order to secure permanent improvement in the finances, Lord Mayo took the pains to secure and collect statistics regarding the population and the various conditions in each locality. The result was that in 1871, India's first census of taken by his orders. Mayo also organized the Statistical Survey of India.

32. (2)

33. (4)

34. (4) Sir Alfred Bernhard Nobel, famously known as Alfred Nobel was the first person to discover the dynamite by

combining diatomaceous earth with nitroglycerin. In 1867 he discovered that mixing nitroglycerine with silica would turn the liquid into a malleable paste, called dynamite.

35. (2)

36. (1) The Ring of Fire is a major area in the basin of the Pacific Ocean where a large number of earthquakes and volcanic eruptions occur. Therefore, it is related to Pacific Ocean, volcano and earthquake.

37. (4)

38. (4) Buland Darwaza or the "Gate of Magnificence" was built by the great Mughal emperor, Akbar in 1601 A.D. at Fatehpur Sikri. Akbar built the Buland Darwaza to commemorate his victory over Gujarat. Buland Darwaza is the highest gateway in the world.

39. (2) The ionisation potential decreases on going down a group. This is because the electron to be removed from the outer energy level is increasingly distant from the nucleus, as a result of the atoms getting bigger down the group. The attraction of the nucleus for the electron becomes less, and it becomes easier to pull it away.

40. (3)

41. (3)

42. (2) Mass of the given planets-
 (i) Jupiter – 1.898×10^{27} kg
 (ii) Saturn – 5.68×10^{26} kg
 (iii) Neptune - 1.02×10^{26} kg
 (iv) Uranus – 8.68×10^{25} kg

43. (4) The Swaraj Party was a political party formed in India on 9th January 1923 after Gaya annual conference in Dec, 1922 of Indian national congress. It was established as the Congress-Khilafat Swarajaya Party.

44. (2) Active Components are the electronic components that require a source of energy to perform their intended functions. Passive component are the electronic component which cannot rely on the source of energy. Hence, resistor, inductor and capacitor are passive components and transistor is an active component.

45. (3) Timur Lang invaded India in 1398 A.D with an aim of destroying the hindu kings and rulers. After crossing the Sindh river, he entered Punjab. This was on 24 September 1398.

46. (3) The process of ovulation is controlled by the hypothalamus of the brain and through the release of hormones secreted in the anterior lobe of the pituitary gland, luteinizing hormone (LH) and follicle-stimulating hormone (FSH). F.S.H. also stimulates the production of the ovarian hormone oestrogen.

47. (3)

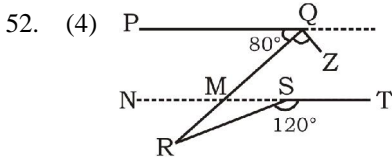
48. (4)

49. (1) One astronomical unit is the approximate mean distance between the Earth and sun. It is originally conceived as the average of Earth's aphelion and perihelion.
 1 A.U = 149597870.7 kms

50. (4)

51. (3) ATQ,

Total	Boys	Girls
100	12+44	44
$\underbrace{\hspace{10em}}_{12\%}$		
	56	: 44
	14	: 11



$\Rightarrow \angle RMS = \angle QMN = 180^\circ - 80^\circ = 100^\circ$
 $\Rightarrow \angle RST = \angle RMS + \angle SRM$
 $\Rightarrow 120^\circ = 100^\circ + \angle SRM$
 $\Rightarrow 20^\circ = \angle SRM$

53. (1) $(A + B) \times 5 = \left(2A + \frac{B}{2}\right) \times 4$

$5A + 5B = 8A + 2B$
 $\Rightarrow 3A = 3B$
 $\Rightarrow A = B$

Efficiency of A and B is equal we can take any value.

Let $A = B = 2$

Total work = $(2 + 2) \times 5 = 20$ units

Time taken by A = $\frac{20}{2} = 10$ days

54. (4) Weight $\rightarrow 3 : 2 : 1 \rightarrow 36$
 Price $\rightarrow 9 : 4 : 1 \rightarrow 14$ } 22

$\therefore 22 = 2310$

Required price = $\frac{2310}{22} \times 36 = \text{Rs. } 3780$

55. (2) Quotient = 16

Divisor = $25 \times 16 = 400$

and remainder = 80

Dividend = Divisor \times quotient + remainder
 $= 400 \times 16 + 80 = 6480$

56. (1) $\therefore x^4 + \frac{1}{x^4} = 47$

$\therefore x^2 + \frac{1}{x^2} = 7$
 $x + \frac{1}{x} = 3 \quad + \quad x - \frac{1}{x} = \sqrt{5}$

$2x = 3 + \sqrt{5} \Rightarrow x = \frac{3 + \sqrt{5}}{2}$

57. (3) $\sin \theta = \frac{1}{2} = \sin 30^\circ = \sin \frac{\pi}{6}$

$\Rightarrow \theta = \frac{\pi}{6}$ [$\because 180^\circ = \pi$ radian]

$\therefore \theta + \phi = \frac{\pi}{2} \Rightarrow \frac{\pi}{6} + \phi = \frac{\pi}{2}$ [$\because 90^\circ = \frac{\pi}{2}$ radian]

$\Rightarrow \phi = \frac{\pi}{2} - \frac{\pi}{6} = \frac{3\pi - \pi}{6} = \frac{2\pi}{6} = \frac{\pi}{3}$

$\therefore \sin \phi = \sin \frac{\pi}{3} = \frac{\sqrt{3}}{2}$

58. (4) Let the opponent got K votes, then winner got K + 200 votes.

ATQ,

20% voters did not vote

2% of total votes = $200 - 120$

$\Rightarrow 80\% - 120 = K + 200 + K$

$80\% = K + 200 + K + 120$
 $\quad \quad \quad \downarrow \quad \quad \quad \downarrow$
 $\quad \quad \quad 41\% \quad \quad \quad 39\%$
 $\quad \quad \quad \underbrace{\hspace{10em}}_{2\%}$
 $= 80$

Total votes = 4,000

Votes for the losing candidate

$= \frac{39}{100} \times 4000 - 120 = 1440$

Total votes casted = $\frac{4}{5} \times 4000 = 3200$

Required percentage = $\frac{1440}{3200} \times 100 = 45\%$

59. (2) C.P of 100 eggs = Rs. 120

S.P. of 96 eggs (8 dozen) = $15 \times 8 = \text{Rs. } 120$

\therefore No profit no loss

60. (2) A = 3 units = Rs. 8550

A + B = 5 units = $= \frac{5 \times 8550}{3} = \text{Rs. } 14250$

Total profit = $\frac{14250}{95} \times 100 = \text{Rs. } 15000$

61. (3) Let the no. be x and y

ATQ,

$xy = 120$

$x^2 + y^2 = 289$

$(x - y)^2 = x^2 + y^2 - 2xy$
 $= 289 - 2 \times 120 = 289 - 240 = 49$

$\therefore x - y = 7$

62. (3) Each interior angle of a regular polygon

$= 180 \times \frac{3}{5} = 108^\circ$

Each exterior angle = $180^\circ - 108^\circ = 72^\circ$

$$\therefore \text{No. of sides} = \frac{360}{72} = 5.$$

63. (2) $\therefore a^3 + b^3 + c^3 - 3abc$

$$\therefore \frac{1}{2}(a+b+c)[(a-b)^2 + (b+c)^2 + (c-a)^2]$$

$$= \frac{1}{2}(999 + 996 + 998)[(3)^2 + (2)^2 + (-1)^2]$$

$$= \frac{1}{2}(2993)(14) + 49 = 21000$$

64. (2) $\frac{\cos^2 60^\circ + 4\sec^2 30^\circ - \tan^2 45^\circ}{\sin^2 30^\circ + \cos^2 30^\circ}$

$$= \left(\frac{1}{2}\right)^2 + 4\left(\frac{2}{\sqrt{3}}\right)^2 - 1$$

$$= \frac{1}{4} + \frac{16}{3} - 1 = \frac{3 + 64 - 12}{12} = \frac{55}{12}$$

65. (1) $A + B = 90^\circ \Rightarrow B = 90 - A$

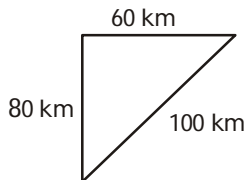
$$\therefore \sec^2 A + \sec^2 B - \sec^2 A \cdot \sec^2 B$$

$$= \sec^2 A + \operatorname{cosec}^2 A - \sec^2 A \cdot \operatorname{cosec}^2 A$$

$$= \frac{1}{\cos^2 A} + \frac{1}{\sin^2 A} - \frac{1}{\sin^2 A \cdot \cos^2 A}$$

$$= \frac{\sin^2 A + \cos^2 A - 1}{\sin^2 A \cdot \cos^2 A} = 0$$

66. (2) The following figure gives the movements of the two swimmers.



The faster swimmer must have travelled 80 km in 2

hours and hence speed = $\frac{80}{2}$

$S = 40 \text{ km/h}$

67. (4) ATQ,
 $200 \times 31 = 27 \times 200 + 80 \times D$
 $4 \times 200 = 80 \times D$
 $\Rightarrow D = 10 \text{ days}$
 Extra days = $(10 - 4) = 6 \text{ days}$

68. (2) Interest for 1st year = Rs. 600
 Interest for 2nd year = Rs. 460
 Interest for 3rd year
 $= 10\% \text{ of } (4600 + 460 - 2000) = \text{Rs. } 306$
 $\therefore \text{the total amount the man pays at the end of 3rd year}$
 $= 2000 + 600 + 460 + 306 = \text{Rs. } 3366$

69. (1) Area of base = Area of right angled triangle
 $= \frac{1}{2} \times 5 \times 12 = 30 \text{ sq. cm. } [\because 5^2 + 12^2 = 13^2]$

$\therefore \text{Volume} = \frac{1}{3} \times \text{Area of base} \times \text{height}$

$\Rightarrow 330 = \frac{1}{3} \times 30 \times h \Rightarrow h = \frac{330}{10} = 33 \text{ cm}$

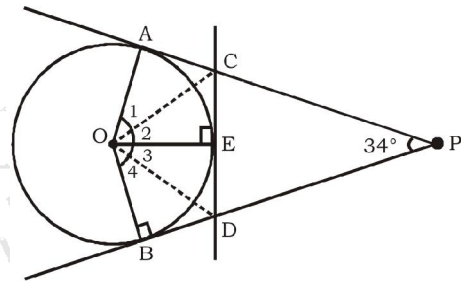
70. (4) $\sec(7\theta + 28^\circ) = \operatorname{cosec}(30^\circ - 3\theta)$
 $\Rightarrow \sec(7\theta + 28^\circ) = \sec(90^\circ - (30^\circ - 3\theta))$
 $\Rightarrow 7\theta + 28^\circ = 90^\circ - 30^\circ + 3\theta$
 $\Rightarrow 4\theta = 90^\circ - 30^\circ - 28^\circ = 32^\circ$
 $\therefore \theta = 8^\circ$

71. (3) Let the corresponding altitude of the triangle = x cm
 ATQ,

Area of the triangle = Area of the circle

$\Rightarrow \frac{1}{2}x \times 8 = \pi \times 8 \times 8 \Rightarrow x = 2 \times 8\pi = 16\pi \text{ cm}$

72. (2)



$\angle AOB = 180^\circ - 34^\circ = 146^\circ$

In $\triangle OAC$ and $\triangle OEC$

$OC = OC$ (common)

$\therefore \triangle OAC \cong \triangle OEC$

$\therefore \angle AOC = \angle COE = \angle 1 = \angle 2$

Similarly, $\triangle OBD \cong \triangle OED$

$\therefore \angle 3 = \angle 4$

$\angle AOB = 180^\circ - 34^\circ = 146^\circ$

In $\triangle AOB$

$\angle 1 + \angle 2 + \angle 3 + \angle 4 = 146^\circ$

$\Rightarrow \angle 2 + \angle 2 + \angle 3 + \angle 3 = 146^\circ$

$\Rightarrow \angle 2 + \angle 3 = 73^\circ$

$\angle COD = 73^\circ$

73. (4) Average amount of interest paid by the Company during the given period

$= \text{Rs.} \left[\frac{23.4 + 32.5 + 41.6 + 36.4 + 49.4}{5} \right] \text{ lakhs}$

$= \text{Rs.} \left[\frac{183.3}{5} \right] \text{ lakhs} = \text{Rs. } 36.66 \text{ lakhs}$

74. (3) Required percentage

$= \left[\frac{3.00 + 2.52 + 3.84 + 3.68 + 3.96}{288 + 342 + 324 + 336 + 420} \times 100 \right] \%$

$= \left[\frac{17}{1710} \times 100 \right] \% \approx 1\%$

75. (3) Required percentage
$$= \left[\frac{288 + 98 + 3.00 + 23.4 + 83}{420 + 142 + 3.96 + 49.4 + 98} \times 100 \right] \%$$
$$= \left[\frac{495.4}{713.36} \times 100 \right] \% \approx 69.45\%$$
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'.
79. (4)
80. (3)
81. (3)
82. (2)
83. (4)
84. (2) Deceptive
85. (1)
86. (2)
87. (1)
88. (4) 'By fair means or foul' means 'use any method to achieve something, even if it is not honest or fair'.
89. (4)
90. (1)
91. (3)
92. (1)
93. (4)
94. (2)
95. (1)
96. (1)
97. (4)
98. (1)
99. (2)
100. (3)

