

SSC CGL - 2310014 GRAND TEST-2022

HINTS AND SOLUTIONS

ANSWER KEY

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

1. (3) Stethoscope is an instrument used by doctor, Similarly, chisel is used by sculptor.

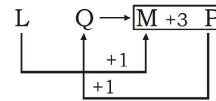
2. (1) $8 : 336$ $6 : 120$
 $\begin{array}{c} \uparrow \quad \uparrow \\ 8 \times 7 \times 6 \quad 6 \times 5 \times 4 \end{array}$

3. (3) Knowledge is acquired through study. Similarly, experience is acquired through work.

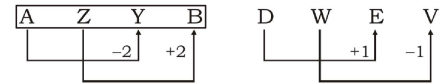
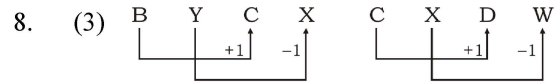
4. (4) $\begin{array}{cccc} A & B & C & D \\ +13 \downarrow & +14 \downarrow & +15 \downarrow & +16 \downarrow \\ N & P & R & T \\ F & G & H & I \\ +13 \downarrow & +14 \downarrow & +15 \downarrow & +16 \downarrow \\ \boxed{S} & \boxed{U} & \boxed{W} & \boxed{Y} \end{array}$

5. (1) $\begin{array}{ccc} O & T & \rightarrow P +3 S \\ \uparrow & \uparrow & \uparrow \\ & +1 & \\ \uparrow & & \\ & +1 & \end{array}$

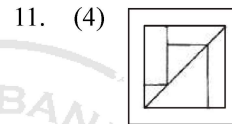
In the same way,



6. (1) Except animals others are non-locomotive.
 7. (1) Except 379, the sum of the digits in rest of the options is 13.



9. (3) Only Renounce has different meaning whereas the other three words have similar meanings.
 10. (3) Due to letter A, the word CAUTION cannot be formed using the letters of original word.



12. (1) Arrival, Introduction, Presentation, Discussion, Recommendation.
 13. (1) The series formed with the group of four letters is. a b c d/ a b c d/ a b c d/ a b c d
 14. (1) The correct sequence is 5², 7², 9², 11², 13² and 15². So, 36 is wrong.

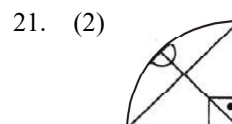
15. (2)
 16. (3) $A = 1 \Rightarrow 1^3 + 1^2 + 1 = 3$
 $B = 2 \Rightarrow 2^3 + 2^2 + 2 = 14$
 $C = 3 \Rightarrow 3^3 + 3^2 + 3 = 39$
 $D = 4 \Rightarrow 4^3 + 4^2 + 4 = 84$
 $\therefore G = 7 \Rightarrow 7^3 + 7^2 + 7 = 399$

17. (3) A simple multiplication series where a number is 3 times its predecessor.

18. (3) The letters decreases by 1 and the numbers are multiplied by 2.

19. (4) Here, it is mentioned that morning walks improves health. but this does not mean that all healthy people go for morning walks. So, I does not follow. Also, nothing is mentioned about evening walks in the statement. So, II also does not follow.

20. (3) $7 \times 6 + 6 \times 4 + 4 \times 7 = 42 + 24 + 28 = 94$
 $5 \times 3 + 3 \times 2 + 5 \times 2 = 15 + 6 + 10 = 31$
 $8 \times 5 + 5 \times 3 + 3 \times 8 = 40 + 15 + 24 = 79$



22. (4) $4 \times 3 \times 5 \times 2 \Rightarrow \frac{120}{2} = 60$

$$5 \times 6 \times 2 \times 3 = 180 \Rightarrow \frac{180}{2} = 90$$

$$\frac{43}{45} = \frac{43 \times 4}{45 \times 4} = \frac{172}{180}$$

$$\frac{59}{60} = \frac{59 \times 3}{60 \times 3} = \frac{177}{180}$$

Since, $155 < 170 < 172 < 177$,

$$\text{So, } \frac{155}{180} < \frac{170}{180} < \frac{172}{180} < \frac{177}{180}$$

$$\text{Hence, } \frac{31}{36} < \frac{17}{18} < \frac{43}{45} < \frac{59}{60}$$

57. (2) Let their initial investments be $x, 3x$ and $5x$ respectively.

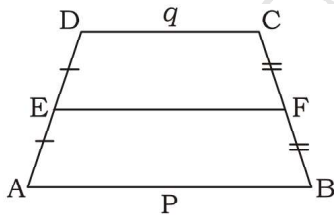
Then,

$$A : B : C = (x \times 4 + 2x \times 8) : \left(3x \times 4 + \frac{3x}{2} \times 8 \right)$$

$$: \left(5x \times 4 + \frac{5x}{2} \times 8 \right)$$

$$= 20x : 24x : 40x = 5 : 6 : 10.$$

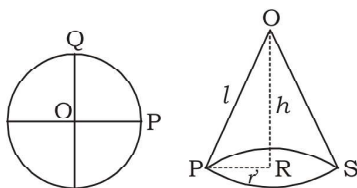
58. (3) Let ABCD is trapezium and E, F are the mid points, then



$$EF = \frac{1}{2}(AB + DC) \Rightarrow EF = \frac{1}{2}(p + q)$$

$$\because \{AB = p, DC = q\}$$

59. (2) The quadrant POQ of the circle is folded in such a way that the arc PQ form the base of the cone. Radii OP and OQ form slant height of the cone and they will coincide.



$$\text{Arc PQ} = \left(\frac{1}{4} \right) 2\pi r = \frac{1}{4} \times 2 \times \frac{22}{7} \times 14 \text{ cm} = 22 \text{ cm}$$

Circumference of the base of the cone = Arc PQ.
or, $2\pi r' = 22$ (where r' = radius of the base of the cone)

$$\text{or, } r' = \frac{22}{2\pi} = \frac{22}{2 \times \frac{22}{7}} = \frac{7}{2} \text{ cm}$$

Slant height of the cone,
OP = radius of the circle or, $l = 14$ cm
Height of the cone,

$$h = \sqrt{(l)^2 - (r)^2}$$

$$\text{or, } h = \sqrt{(14)^2 - \left(\frac{7}{2} \right)^2} = \sqrt{\frac{735}{4}} \text{ cm} = \frac{1}{2} \sqrt{735} \text{ cm}$$

Volume of the cone

$$= \frac{1}{3} \pi (r')^2 h = \frac{1}{3} \times \frac{22}{7} \times \left(\frac{7}{2} \right)^2 \times \frac{\sqrt{735}}{2} \text{ cm}^3$$

$$= \frac{77}{12} \sqrt{735} \text{ cm}^3 = 174 \text{ cm}^3 \text{ (Approx.)}$$

60. (1) Let the number of other workers be x .
Then, number of agricultural workers = $11x$
Total number of workers = $12x$
 \therefore Average monthly income

$$= \frac{S \times 11x + T \times x}{12x} = \frac{11S + T}{12}$$

61. (1) Let the speed of the stream be x m/h.

Then,
Speed downstream = $(10 + x)$ m/h,
Speed upstream = $(10 - x)$ m/h

$$\therefore \frac{36}{(10 + x)} - \frac{36}{(10 - x)} = \frac{90}{60}$$

$$\Rightarrow 72x \times 60 = 90(100 - x^2)$$

$$\Rightarrow x^2 + 48x - 100 = 0$$

$$\Rightarrow (x + 50)(x - 2) = 0$$

$$\Rightarrow x = 2 \text{ m/h}$$

62. (3) $\frac{\sin 2\theta + \sin \theta}{\cos 2\theta + \cos \theta + 1} = \frac{2 \sin \theta \cdot \cos \theta + \sin \theta}{2 \cos^2 \theta - 1 + \cos \theta + 1}$

$$= \frac{\sin \theta (2 \cos \theta + 1)}{2 \cos^2 \theta + \cos \theta} = \frac{\sin \theta (2 \cos \theta + 1)}{\cos \theta (2 \cos \theta + 1)} = \frac{\sin \theta}{\cos \theta} = \tan \theta$$

63. (1) Product of numbers = $11 \times 385 = 4235$

Let the numbers be $11a$ and $11b$.

$$\text{Then, } 11a \times 11b = 4235$$

$$\Rightarrow ab = 35$$

Now, co-primes with product 35 are $(1, 35)$ and $(5, 7)$

So, the numbers are $(11 \times 1, 11 \times 35)$ and $(11 \times 5, 11 \times 7)$

Since one number lies between 75 and 125, the suitable pair is $(55, 77)$

Hence, required number = 77.

64. (3) Let the original price be ` 100

Then, marked price = ` 130

Final price = 90% of ` 130

$$= \left(\frac{90}{100} \times \frac{90}{100} \times 130 \right) = \text{` } 105.30$$

$$\therefore \text{Increase in price} = (105.30 - 100)\% = 5.3\%$$

65. (3) Let speed of the car be x km/h

$$\text{Then, speed of the train} = \frac{150}{100}x = \left(\frac{3}{2}x\right) \text{ km/h}$$

$$\therefore \frac{75}{x} - \frac{75}{\frac{3}{2}x} = \frac{125}{10 \times 60} \Rightarrow \frac{75}{x} - \frac{50}{x} = \frac{5}{24}$$

$$\Rightarrow x = \left(\frac{25 \times 24}{5}\right) = 120 \text{ km/h}$$

66. (1) $\angle \text{COB} = 360^\circ - (110^\circ + 90^\circ) = 160^\circ$

$$\Rightarrow x = \angle \text{CAB} = \frac{1}{2} \angle \text{COB} = \frac{1}{2} \times 160^\circ = 80^\circ$$

67. (3) Let Rajan's present age be x years.

Then, his age at the time of marriage = $(x - 8)$ years

$$\therefore x = \frac{6}{5}(x - 8) \Rightarrow 5x = 6x - 48 \Rightarrow x = 48.$$

Rajan's sister's age at the time of his marriage

$$= (x - 8) - 10 = (48 - 18) = 30 \text{ years}$$

\therefore Rajan's sister's present age = $(30 + 8)$ years = 38 years

68. (2) Given $x = \frac{\sqrt{3}}{2}$

$$\frac{\sqrt{1+x}}{1+\sqrt{1+x}} \times \frac{1-\sqrt{1+x}}{1-\sqrt{1+x}} + \frac{\sqrt{1-x}}{1-\sqrt{1-x}} \times \frac{1+\sqrt{1-x}}{1+\sqrt{1-x}}$$

$$= \frac{\sqrt{1+x}-1-x}{1-1-x} + \frac{\sqrt{1-x}+1-x}{1-1+x}$$

$$= \frac{\sqrt{1-x}+1-x}{x} - \frac{\sqrt{1+x}-1-x}{x}$$

$$= \frac{\sqrt{1-x}+1-x-\sqrt{1+x}+1+x}{x}$$

$$= \frac{2+\sqrt{1-x}-\sqrt{1+x}}{x} = \frac{2+\sqrt{1-\frac{\sqrt{3}}{2}}-\sqrt{1+\frac{\sqrt{3}}{2}}}{\frac{\sqrt{3}}{2}}$$

$$= \frac{2+\frac{\sqrt{4-2\sqrt{3}}}{2}-\frac{\sqrt{4+2\sqrt{3}}}{2}}{\frac{\sqrt{3}}{2}}$$

$$= \frac{4+\sqrt{3}-1-\sqrt{3}-1}{\sqrt{3}} = \frac{2}{\sqrt{3}}$$

$$69. (1) \left[15000 \times \left(1 + \frac{R}{100}\right)^2 - 15000 \right] - \left(\frac{15000 \times R \times 2}{100} \right) = 96$$

$$\Rightarrow 15000 \left[\left(1 + \frac{R}{100}\right)^2 - 1 - \frac{2R}{100} \right] = 96$$

$$\Rightarrow 15000 \left[\frac{(100+R)^2 - 10000 - 200R}{10000} \right] = 96$$

$$\Rightarrow R^2 - \frac{96 \times 2}{3} = 64 \Rightarrow R = 8$$

70. (2) Let x is the no. of individuals who were covered. Then,

Percentage of uncertain individuals

$$= [100 - (20 + 60)]\% = 20\%$$

$$\therefore 60\% \text{ of } x - 20\% \text{ of } x = 720$$

$$\Rightarrow 40\% \text{ of } x = 720$$

$$\Rightarrow \frac{40}{100}x = 720 \Rightarrow x = \left(\frac{720 \times 100}{40}\right) = 1800.$$

71. (3) Required number of students passed in third division = 70

72. (3) Percentage of students failed in 1984

$$= \frac{35}{200} \times 100 = 17\frac{1}{2}\%$$

73. (3) Total passed students = $140 + 150 + 165 = 455$

$$\text{Total students} = 170 + 195 + 200 = 565$$

\therefore Required percentage

$$= \frac{455}{565} \times 100 = \frac{9100}{113} = 80\frac{60}{113}\%$$

74. (1) Required percentage = $\frac{20}{170} \times 100 = \frac{200}{17} = 11\frac{13}{17}\%$

75. (1) Required percentage = $\frac{140}{170} \times 100 = \frac{1400}{17} = 82\frac{6}{17}\%$

76. (1) Replace 'are' by 'have', as the sentence is in present perfect tense.

77. (3) 'Make both ends meet' is a definite phrase which means 'to earn livelihood'.

78. (1) No error

79. (2) Since there is 'only' in the sentence which refers it will take something negative to the sentence. Thus, place 'momentary' meaning for a very short period of time'.

87. (1) 'Scarcely.... When' is a correlative.

88. (2) 'Question tag' is in the same tense as that of the sentence and if the sentence is positive, the question tag is negative.

90. (4) 'Prefer' is followed by preposition 'to'.