SSC CGL (Tier-I)- 210012 GRAND TEST-2022
HINTS AND SOLUTIONS

ANSWER KEY

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

1. (3) A cub is a young bear, and a joey is a young kangaroo.
2. (3) You enter and exit a highway by a ramp and you enter and exit a house by a door.
3. (3) A haiku is a type of poem, and a fable is a type of story.
4. (1) A F K P B G L Q (+1, +1, +1, +1)

   Similarly,

   C H M R **D I N S** (+1, +1, +1, +1)
5. (1) 9536 – 6203 = 3333,
   Similarly,
   ? = 5873 – 3333 = 2540
6. (1) 72 – 41 = 125
   30 – 12 = 18
   51 – 42 = 9
   20 – 11 = 9
   Except 125, the rest of the difference are one of the factor of 9.
7. (4) The number 125 is a perfect cube.
   $5 \times 5 \times 5 = 125$
8. (4) $F \xrightarrow{+3} I \xrightarrow{+2} K$

   $M \xrightarrow{+3} G \xrightarrow{+2} I$

   $M \xrightarrow{+3} P \xrightarrow{+2} R$

   $K \xrightarrow{+3} N \xrightarrow{-10} D$
9. (2) Read 'Stream' as 'Stem'.
   Except (B), In others second is a part of first whereas chair and sofa are different types.
10. (2) $W \xrightarrow{+5} B \xrightarrow{+9} K \xrightarrow{+6} Q \xrightarrow{+7} X \xrightarrow{+1} Y \xrightarrow{+7} F$

    $\mathbf{W \xrightarrow{+2} Y \xrightarrow{+3} B \xrightarrow{+4} F \xrightarrow{+5} K \xrightarrow{+6} Q \xrightarrow{+7} X}$

    $Y \xrightarrow{+3} B \xrightarrow{+15} Q \xrightarrow{+0} Q \xrightarrow{-11} F \xrightarrow{+2} H \xrightarrow{+6} N$

    $W \xrightarrow{+3} Z \xrightarrow{+3} C \xrightarrow{+5} H \xrightarrow{+2} J \xrightarrow{+3} M \xrightarrow{+4} Q$
11. (2)

13	8	9	17	14	22	
↓	↓	↓	↓	↓	↓	
M	H	I	Q	N	V	
1	**12**	**7**	**5**	**2**	**18**	**1**
↓	↓	↓	↓	↓	↓	↓
A	**L**	**G**	**E**	**B**	**R**	**A**
4	21	7	18	13	1	
↓	↓	↓	↓	↓	↓	
D	U	G	R	M	A	

12. (1)

C	A	R		S	I	T		W	E	L	L
↓	↓	↓		↓	↓	↓		↓	↓	↓	↓
∅	α	δ		η	ψ	κ		σ	i	γ	γ

M	A	P					
↓	↓	↓	So,	↓	↓	↓	↓
μ	α	β		**L**	**A**	**M**	**P**

13. (2) 13 * 12 * 5 * 4 → 13 = 12 + 5 – 4 = 17 – 4
14. (3) $4 \times 8 + 3 = 32 + 3 = 35$
    $7 \times 6 + 7 = 42 \Rightarrow 42 + 7 = 49$
    $9 \times 8 + 9 = 72 + 9 = 81$
15. (2) $\frac{225}{15} = 15 \rightarrow 15 \times 2 = 30$

    $\frac{70}{7} = 10 \rightarrow 10 \times 2 = 20$

    $\frac{?}{3} = \frac{8}{2} \rightarrow 2 \times ? = 8 \times 3$ $\qquad \therefore \frac{24}{2} = 12$

16. (3)

S	E	Q	U	E	N	C	E
↓	↓	↓	↓	↓	↓	↓	↓
H	V	J	F	V	M	X	V

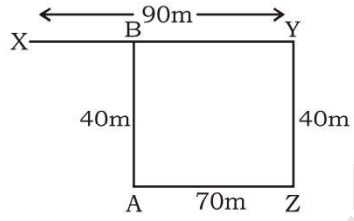
Opposite Letters
Similarly,

C	H	I	L	D	R	E	N
↓	↓	↓	↓	↓	↓	↓	↓
X	S	R	O	W	I	V	M

17. (4) Only son of woman's grandfather means father of that woman.
Father of woman is the father of man's brother and hence father of that man.
Therefore, the woman is sister of the man in photograph.

18. (3) $5 \times 2 + 1 = 11$
$11 \times 2 - 1 = 21$
$21 \times 2 + 1 = 43$
$43 \times 2 - 1 = 85$
$85 \times 2 + 1 = 171$

19. (3)

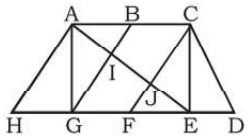


Required distance = XB = 90 – 70 = 20 metre

20. (2) Clearly, assumption I is implicit in the statement. It is mentioned that the values of an educated will differ from that of an uneducated person. It does not imply that an uneducated person will not have value.

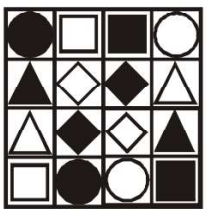
21. (1)

22. (4) The figure may be labelled as shown.



The simplest triangles are AHG, AIG, AIB, JFE, CJE and CED i.e. 6 in number. Triangles composed of two components each are ABG, CFE, ACJ and EGI i.e. 4 in number.
Triangles composed of three components each are ACE, AGE and CFD i.e. 3 in number.
There is only one triangle i.e. AHE composed of four components.
Therefore, There are 6 + 4 + 3 + 1 = 14 triangles in the given figure.

23. (1)



24. (4)

25. (2) L.C.M. of 6, 5, 7, 10 and 12 is 420.
So, the bells will ring together after every 420 seconds i.e. 7 minutes.
Now, $7 \times 8 = 56$ and $7 \times 9 = 63$.
Thus, in 1 hour (or 60 minutes), the bells will toll together 8 times, excluding the one at the start.

51. (2) Let speed of boat = x, speed of current = y
Downstream speed = (x + y),
upstream speed = (x – y)
Condition (i):

$$\frac{21}{x+y}+\frac{21}{x-y}=10 \qquad ...(1)$$

Condition (ii):

$$\frac{7}{x+y}=\frac{3}{x-y} \Rightarrow \frac{x+y}{x-y}=\frac{7}{3},$$ assume x + y = 7k,

(x – y) = 3k, put values in equ. (1)
then, k = 1, x + y = 7, x – y = 3

$$\text{speed of boat} = \frac{7+3}{2} = 5 \text{ km/h}$$

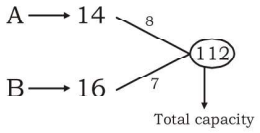
$$\text{speed of current} = \frac{7-3}{2} = 2 \text{ km/h}$$

52. (4) The ratio of shares of group of men, women and boys
$= 9 \times 4 : 8 \times 5 : 4 \times 6 = 36 : 40 : 24$
Share of 5 women

$$= \frac{40}{36+40+24} \times 425 = ` 170$$

$$\therefore \text{ the share of 1 woman} = \frac{170}{5} = ` 34$$

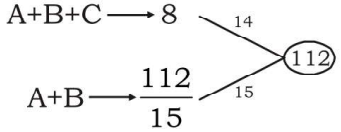
53. (2)



$$\text{Time required to fill the tank} = \frac{112}{15} \text{ hr}$$

According to question when leak is open.

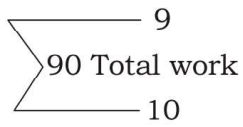
$$\text{Total time (A + B + C)} = \frac{112}{15}+\frac{32}{60} = 8 \text{ hours}$$



Efficiency of leak pipe (C) = 15 – 14 = 1 unit/hr

$$\text{Required time for pipe C to empty tank} = \frac{112}{1} = 112 \text{ hr}$$

54. (2) Ist candle → 10
IInd candle → 9



ATQ,

$$\frac{90-9t}{90-10t}=\frac{2}{1}$$

$90 - 9t = 180 - 20t$

$-90 = -11t$

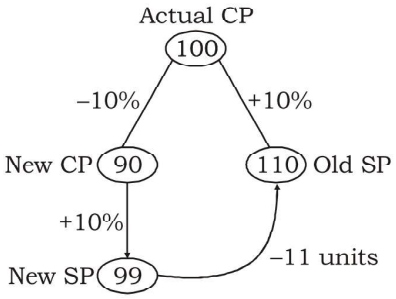
$$\therefore t=\frac{90}{11}=8\frac{2}{11}\text{ hr}$$

55. (1)

56. (1) Number of votes of the second candidate

$$=\frac{1}{5}\times\left(\frac{9}{10}\times 180000\right)=32400$$

57. (2) Let the cost price of the bicycle = 100 units
ATQ,



11 units = 132

$$1\text{ unit}=\frac{132}{11}=12$$

Actual CP (100 units) = 12 × 100 = ` 1200

58. (4) A = B + 4000
B = C + 5000
A + B + C = 50,000
B + 4000 + B + B – 5000 = 50000
3B = 51000

$$B=\frac{51000}{3}=17000$$

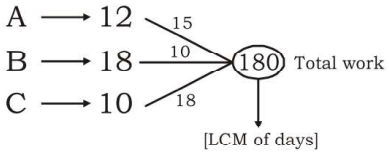
$\therefore$ A = 17000 + 4000 = ` 21000

Hence in 35000 A gets $\frac{21000}{50000}\times 35000 =$ ` 14700

59. (3) We may consider that ` (1800 – 1650) gives interest of ` 30 at 4% per annum.

$$\therefore \text{ Time }=\frac{30\times 100}{150\times 4}=5\text{ years}$$

60. (3) Time taken by A to complete the job = 12 days
Time taken by B to complete the job = 18 days
Time taken by C to complete the job = 10 days



According to question,
Work done by A, B and C in three days
= 43 × 3 = 129 units
Remaining work = (180 – 129) = 51 units
Time taken by B to complete the remaining work

$$=\frac{51}{10}=5.1\text{ days}$$

61. (1) Runs in the first match = 150

$$\text{Runs in the second match }=\frac{150}{5}\times 6=180$$

$$\text{Runs in the third match }=\frac{180}{4}\times 3=135$$

$$\text{Required average }=\frac{150+180+135}{3}=155$$

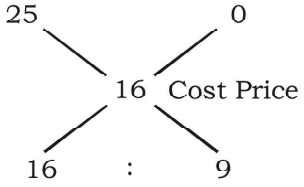
62. (1) Let the amount (sum) deposited for the two sons are A and B respectively.
ATQ,

$$A\left(1+\frac{4}{100}\right)^5=B\left(1+\frac{4}{100}\right)^7$$

$$\Rightarrow \frac{A}{B}=\left(1+\frac{4}{100}\right)^2=\left(\frac{26}{25}\right)^2=\frac{676}{625}$$

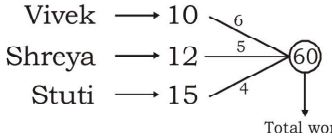
$\therefore$ (676 + 625) units = 2602
1301 units = 2602
1 unit = 2
Amount deposited into the account of 1st son
= 676 × 2 = ` 1352

63. (2) ATQ,
` 20 is selling price
so cost price will be = ` 16
Cost of mixture **Cost of water**



So, required ration = 16 : 9

64. (3)

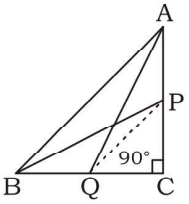


Vivek leaves after 2 days so remaining work
= 60 – 12 = 48
and last three days stuti work alone
∴ Remaining work ? 60 – 12 + 15 = 63

$\therefore$ Required time $= \frac{63}{9} = 7$ days

Total days → 4 + 3 = 7

65. (4)



$AQ^2 = AC^2 + QC^2$
$BP^2 = BC^2 + CP^2$
$AQ^2 + BP^2 = (AC^2 + BC^2) + (QC^2 + CP^2)$

$$= AB^2 + \left(\frac{BC}{2}\right)^2 + \left(\frac{AC}{2}\right)^2$$

$$= AB^2 + \frac{1}{4}(BC^2 + AC^2) = AB^2 + \frac{1}{4}AB^2 = \frac{5}{4}AB^2$$

$$\Rightarrow 4(AQ^2 + BP^2) = 5AB^2$$

66. (3) Side of the first square

$= \sqrt{\text{Area}} = \sqrt{200} = 10\sqrt{2}$ metre

Its diagonal $= \sqrt{2} \times \text{side} = 10\sqrt{2} \times \sqrt{2} = 20$ metre

∴ Diagonal of new square

$= \sqrt{2} \times 20 = 20\sqrt{2}$ metre

$\therefore$ Its area $= \frac{1}{2} \times (\text{diagonal})^2$

$= \frac{1}{2} \times 20\sqrt{2} \times 20\sqrt{2}$ m $= 400$ sq. metre

67. (4) x = y

$$\Rightarrow 2t = \frac{2t-1}{3} \Rightarrow 6t = 2t - 1 \Rightarrow 4t = -1$$

$$\Rightarrow t = -\frac{1}{4}$$

68. (4) Area of the base $= \frac{\sqrt{3}}{4} \times (\text{side})^2$

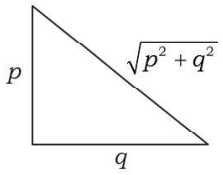
$$= \frac{\sqrt{3}}{4} \times 6 \times 6 = 9\sqrt{3} \text{ sq. cm.}$$

∴ volume of the prism = Area of the base × height

$$\Rightarrow 108\sqrt{3} = 9\sqrt{3} \times h$$

$$\Rightarrow h = \frac{108\sqrt{3}}{9\sqrt{3}} = 12 \text{ cm}$$

69. (3)



$$\frac{p \times \frac{\sqrt{p^2+q^2}}{p} - q \times \frac{\sqrt{p^2+q^2}}{p}}{p \times \frac{\sqrt{p^2+q^2}}{q} + q \times \frac{\sqrt{p^2+q^2}}{p}} = \frac{\frac{p}{q} - \frac{q}{p}}{\frac{p}{q} + \frac{q}{p}} = \frac{p^2 - q^2}{p^2 + q^2}$$

70. (3) $ax^2 + bx + c = a(x - p)^2$
$ax^2 + bx + c = a(x^2 - 2px + p^2)$
$ax^2 + bx + c = ax^2 - 2apx + ap^2$
On comparison, we get

$b^2 = 4a^2$ p^2 and $p^2 = \frac{c}{a}$

$$\Rightarrow p^2 = \frac{b^2}{4a^2} \Rightarrow \frac{b^2}{4a^2} = \frac{c}{a}$$

$$\Rightarrow \boxed{b^2 = 4ac}$$

71. (1) Difference between C.I. & S.I. for 2 years at 5% rate = (10.25% – 10) = 0.25%
0.25% of ` 4000 = ` 10

72. (1) 3 : 2

73. (2) Avg. Demand

$$= \frac{3000 + 600 + 2500 + 1200 + 3300}{5} = 2120$$

Avg. Production

$$= \frac{1500 + 1800 + 1000 + 2700 + 2200}{5} = 1840$$

∴ Required diff = 2120 – 1840 = 280

74. (3) Required percentage $= \frac{2700}{1500} = 1.80$

75. (1) Required percentage $= \frac{600}{2500} \times 100 = 24\%$

76. (1) Since an action has already started (learning english) and still going on comes under present perfect continuous tense. Thus, replace 'am' by 'have been'.

77. (2) Use 'mile' instead of 'miles'. Here, plural number has been used as a singular unit (a two-mile race).

78. (3) 'Stand by somebody' means 'to help somebody or be friends with them, even in difficult situations.'

79. (4) If a motor or an engine cuts in, it starts working.

81. (2) 'Touch on/upon something' means 'to mention or deal with a subject in only a few words, without going into detail'.

82. (1) 'With a view to' takes 'v1 + ing' after it.