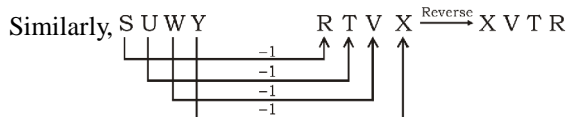
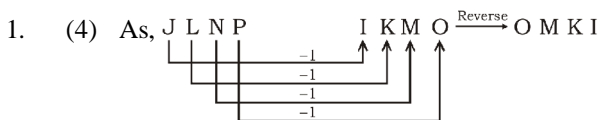


SSC CGL - 170836 GRAND TEST
HINTS AND SOLUTIONS

ANSWER KEY

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

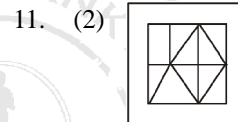


- (1) One who collects stamps is called philatelist. Similarly, one who collects coins is called numismatist.
- (4) Clearly, $3^2 + 2 = 11$,
Now $7^2 + 2 = 51$
So, if the first number is x, the second number is $x^2 + 2$.
- (4) Coins are cost and stamped in a mint. Similarly, bricks are baked in a kiln.

- (3) As, 1 2 3 4
P A L E
3 4 2 1
L E A P

So, 1 2 3 4
P O S H
3 4 2 1
S H O P

- (3) Except Kandla, all are ranges of Himalayas, while Kandla is a sea-port in Gujarat.
- (1) Except Deuce, all terms are associated with cricket.
- (3) In all other numbers, the sum of the digit is 28.
- (2) Currency used in UK is sterling pound where as the rest three countries use Euro as their currency.
- (4) B, E, A, T are respectively the 2nd, 5th, 1st, 20th letters from the beginning of the English alphabet. The letters of the code Y, V, Z, G are respectively the 2nd, 5th, 1st and 20th letters from the end of the English alphabet. Similarly, M, I, L, D are respectively 13th, 9th, 12th, 4th, letters from the beginning of the English alphabet and the 13th, 9th, 12th, 4th, letters from the end of the English alphabet are N, R, O, W respectively. So, the required code is NROW.



- (4) In each set, 2nd number = (1st number + 9) and 3rd number = (2nd number + 13)
- (3) The correct sequence is
a b b/ a a b/ a b b/ a a b/ a b b/ a
- (1) As mentioned, the 7th day of the month is three day earlier than Friday, which is Tuesday. So, the 14th day is also Tuesday and thus the 19th day will be Sunday.

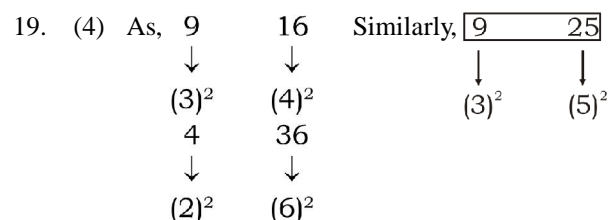
15. (4) $10 \times 2 \Rightarrow 10 - 2 = 8 \Rightarrow \frac{8}{2} = 4$

$14 \times 4 \Rightarrow 14 - 4 = 10 \Rightarrow \frac{10}{2} = 5$

$24 \times 12 \Rightarrow 24 - 12 = 12 \Rightarrow \frac{12}{2} = 6$

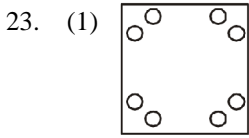
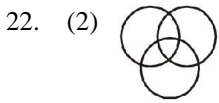
- (4) Each successive term exceeds by 111 over its previous term.
- (2) 1st letter, A $\xrightarrow{-6}$ G $\xrightarrow{+6}$ M $\xrightarrow{+6}$ S $\xrightarrow{-6}$ Y
2nd letter, Z $\xrightarrow{-6}$ T $\xrightarrow{-6}$ N $\xrightarrow{-6}$ H $\xrightarrow{-6}$ B

- (1) Clearly, sum of numbers in each row is 17.
So, missing numbers = $17 - (4 + 7) = 6$



20. (3) Answer figure (3) will complete the pattern of question figure.

21. (1)



24. (1) Let the age of the elder son be x yrs.
Then, age of younger son = $(x - 15)$ yrs;
Age of the father = $2x$ yrs
So, $2x + 10 = 3(x - 15 + 10)$
 $\Rightarrow 2x + 10 = 3x - 15 \Rightarrow x = 25$
 \therefore Father's age = $2x = 50$ yrs

25. (1) S \rightarrow 00, 12, 24, 33, 41
O \rightarrow 04, 13, 21, 30, 42
R \rightarrow 57, 69, 78, 85, 96
T \rightarrow 55, 66, 79, 88, 97
 \therefore SORT \rightarrow 24, 21, 96, 88

51. (3) 1 day's work of $2(A + B + C)$
 $= \frac{1}{8} + \frac{1}{6} + \frac{1}{10} = \frac{15 + 20 + 12}{120} = \frac{47}{120}$ part
 $A + B + C = 1$ day's work = $\frac{1}{2} \times \frac{47}{120}$ part
No. of days = $\frac{120 \times 2}{47} = \frac{240}{47} = 5 \frac{5}{47}$ days

52. (2) $H_1 = 100, H_2 = 115, R_1 = 100, R_2 = 90$
Curved surface area = $2\pi rh$
 $2\pi R_1 H_1 \quad 2\pi R_2 H_2$
 $\Rightarrow 100 \times 100 \quad \Rightarrow 115 \times 90$
 $\Rightarrow 10,000 \quad \Rightarrow 10350$
 $\Rightarrow 200 \quad \Rightarrow 207$
Increase = $207 - 200 = 7$
 $\% \text{ increase} = \frac{\text{increase}}{\text{original}} \times 100\% = \frac{7}{200} \times 100 = 3.5\%$

53. (2) Price(Rs.) \times Qty.(kg) = expenses(Rs.)
 $\Rightarrow 10(-25\%) \times 10(+30\%) = \text{Rs. } 100 - \text{Rs. } 2.5$
 $\Rightarrow 7.5 \times 13 = \text{Rs. } 97.5$

$$\text{Reqd}\% = \frac{-2.5}{100} \times 100 = 2 \frac{1}{2}\% \text{ decrease}$$

54. (2) $10W \times 7D = 10C \times 14D$
 $1W = 2C$
 $\therefore 5W + 10C = 20C$
Since 10C takes 14 days to complete the work.
Hence 20C take 7 days.

55. (2)

Gold	Silver	
80	20	$\Rightarrow \text{diff.} = 300$
95	5×4	$\left(\begin{matrix} 80 & 20 \\ 380 & 20 \end{matrix} \right)$

80 + 20 i.e. to make silver equal
100 units = 50g

$$\therefore 1 \text{ unit} = \frac{1}{2} \text{ g}$$

Difference between 80 and 380 i.e. 300 units = 150 gm.

56. (3) Let the present age of mother be x years.
 \therefore present age of son be $(30 - x)$ years
6 years ago, mother's age = $(x - 6)$ years
and son's age = $30 - x - 6 = 24 - x$ years
According to the question,
 $(x - 6) - (24 - x) = 18$
 $\Rightarrow x - 6 - 24 + x = 18$
 $\Rightarrow 2x - 30 = 18$
 $\Rightarrow 2x = 18 + 30$
 $\Rightarrow 2x = 48 \Rightarrow x = 24$
 \therefore 6 years ago mother's age = $24 - 6 = 18$ years.

57. (2) Cistern is filled by inlet in $3 \frac{1}{2}$ hrs = $\frac{7}{2}$ hrs.

In 1 hr it filled $\frac{2}{7}$ part

Cistern with leakage can be filled in 4 hrs

In 1 hr it filled $\frac{1}{4}$ part

In 1 hr the leakage emptied

$$= \frac{2}{7} - \frac{1}{4} = \frac{8 - 7}{28} = \frac{1}{28} \text{ part}$$

Leakage will take 28 hrs.

58. (3) 12 months' salary = Rs. 90 + turban

$$\therefore 9 \text{ months's salary} = (\text{Rs. } 90 + \text{turban}) \times \frac{9}{12}$$

$$= \text{Rs. } 90 \times \frac{3}{4} + \frac{3}{4} \text{ turban}$$

$$= \text{Rs. } \frac{135}{2} + \frac{3}{4} \text{ turban}$$

$$\therefore \text{Rs. } \frac{135}{2} + \frac{3}{4} \text{ turban}$$

$$= \text{Rs. } 65 + \text{turban}$$

$$\therefore \frac{1}{4} \text{ turban} = \frac{135}{2} - 65 = \text{Rs. } \frac{5}{2}$$

$$\therefore \text{Turban} = \frac{5}{2} \times 4 = \text{Rs. } 10$$

59. (3) Male employees = x
 Female employees = y
 $\therefore (x + y) 12000 = x \times 15000 + y \times 8000$
 $\Rightarrow (x + y) \times 12 = 15x + 8y$
 $\Rightarrow 12x + 12y = 15x + 8y$
 $\Rightarrow 3x = 4y$
 $\Rightarrow \frac{x}{y} = \frac{4}{3}$

$\Rightarrow x : y = 4 : 3$
 60. (4) Distance travelled by A

$$= 2 \times \text{distance between two points} \times \left(\frac{a}{a+b} \right)$$

$$= 2 \times 21 \times \frac{3}{7} = 18 \text{ km}$$

61. (3) Total income will be 7800
 10% of A = 15% of B = 20% of C
 If 5% = 1 then,

$$2A = 3B = 4C$$

L.C.M = (12)

$$A : B : C = \frac{12}{2} : \frac{12}{3} : \frac{12}{4}$$

$$\Rightarrow A : B : C = 6 : 4 : 3 = \text{Total} = 13$$

$$\text{B's income} = \frac{4}{13} \times 7800 = \text{Rs. } 2400$$

62. (1) Let the duration of flight be t hours.

$$S = \frac{D}{T}$$

$$S_1 - S_2 = 200 \text{ km/h}$$

$$\Rightarrow \frac{600}{t} - \frac{600}{t + \frac{1}{2}} = 200$$

$$\Rightarrow \frac{600}{t} - \frac{2 \times 600}{2t + 1} = 200$$

$$\Rightarrow (2t + 1) 600 - t \times 1200 = 200t(2t + 1)$$

$$\Rightarrow 3(2t + 1) - 6t = t(2t + 1)$$

$$\Rightarrow 6t + 3 - 6t = 2t^2 + t$$

$$\Rightarrow 2t^2 + t - 3 = 0$$

$$\Rightarrow 2t^2 + 3t - 2t - 3 = 0$$

$$\Rightarrow t(2t + 3) - 1(2t + 3) = 0$$

$$\Rightarrow (2t + 3)(t - 1) = 0$$

$$\Rightarrow t = 1 \text{ hr}$$

63. (4) We find LCM of 5, 6 and 8

$$5 = 5, 6 = 3 \times 2, 8 = 2^3$$

$$= 2^3 \times 3 \times 5 = 8 \times 15 = 120$$

$$\text{Required number} = 120K + 3$$

$$\therefore \text{when } K = 2, 120 \times 2 + 3 = 243$$

$$\text{Required number}$$

$$\text{It is completely divisible by } 9$$

64. (2) Let principal (present worth) for first year be P_1 and that for 2nd years be P_2 .

$$\therefore 16224 = P_1 \left(1 + \frac{4}{100} \right)$$

$$\Rightarrow 16224 = P_1 \left(1 + \frac{1}{25} \right) = \frac{26P_1}{25}$$

$$\Rightarrow P_1 = \frac{16224 \times 25}{26} = \text{Rs. } 15600$$

Again,

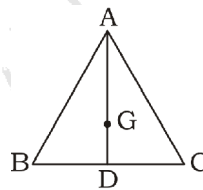
$$16224 = P_2 \left(1 + \frac{4}{100} \right)^2$$

$$\Rightarrow 16224 = P_2 \left(\frac{26}{25} \right)^2 = \frac{676P_2}{625}$$

$$\Rightarrow P_2 = \frac{16224 \times 625}{676} = \text{Rs. } 15000$$

$$\therefore \text{Cash value of the scooter} = \text{Rs. } (16224 + 15600 + 15000) = \text{Rs. } 46824$$

65. (2)



$$AB = 10 \text{ cm}, BD = 5 \text{ cm}$$

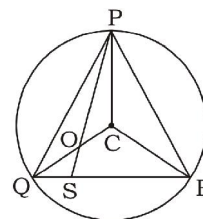
$$\angle ADB = 90^\circ$$

$$\therefore AD = \sqrt{AB^2 - BD^2} = \sqrt{10^2 - 5^2}$$

$$= \sqrt{100 - 25} = \sqrt{75} = 5\sqrt{3} \text{ cm}$$

$$\therefore AG = \frac{2}{3} AD = \frac{2}{3} \times 5\sqrt{3} = \frac{10\sqrt{3}}{3} \text{ cm}$$

66. (2)



$$\angle PQS = 60^\circ$$

$$\angle QCR = 130^\circ$$

$$\therefore \angle QPR = \frac{1}{2} \times 130^\circ = 65^\circ$$

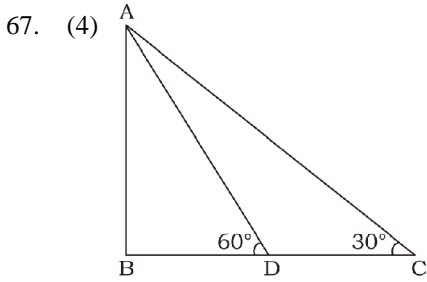
$$\Rightarrow \angle QRP = 180^\circ - 60^\circ - 65^\circ = 55^\circ$$

In ΔRPS

$$\angle PSR + \angle PRS + \angle RPS = 180^\circ$$

$$\Rightarrow 90^\circ + 55^\circ + \angle RPS = 180^\circ$$

$\Rightarrow \angle RPS = 35^\circ$.



AB = Height of tower = h metre (let)

CD = 70 metre

BD = x metre (let)

In $\triangle ABC$,

$$\tan 30^\circ = \frac{AB}{BC} \Rightarrow \frac{1}{\sqrt{3}} = \frac{h}{x + 70}$$

$$\Rightarrow \sqrt{3}h = x + 70$$

$$\Rightarrow x = \sqrt{3}h - 70 \quad \dots(i)$$

In $\triangle ABD$,

$$\tan 60^\circ = \frac{h}{x} \Rightarrow \sqrt{3} = \frac{h}{x}$$

$$\Rightarrow x = \frac{h}{\sqrt{3}} \quad \dots(ii)$$

From equations (i) and (ii),

$$\sqrt{3}h - 70 = \frac{h}{\sqrt{3}} \Rightarrow \sqrt{3}h - \frac{h}{\sqrt{3}} = 70$$

$$\Rightarrow \frac{3h - h}{\sqrt{3}} = 70 \Rightarrow 2h = 70\sqrt{3}$$

$$\Rightarrow h = \frac{70\sqrt{3}}{2} = 35\sqrt{3} \text{ metre}$$

68. (2) $\frac{x}{y} = \frac{\left(\frac{a^2 - 25}{a^2 - 36}\right)}{\left(\frac{a + 5}{a + b}\right)} = \frac{(a + 5)(a - 5)}{(a + 6)(a - 6)} = \frac{a - 5}{a - 6}$

69. (4) $\cos \theta \cdot \operatorname{cosec} 23^\circ = 1$

$$\Rightarrow \operatorname{cosec} 23^\circ = \frac{1}{\cos \theta} = \sec \theta$$

$$\Rightarrow \operatorname{cosec} 23^\circ = \operatorname{cosec} (90^\circ - \theta)$$

$$\Rightarrow 23^\circ = 90^\circ - \theta$$

$$\Rightarrow \theta = 90^\circ - 23^\circ = 67^\circ$$

70. (1) Look at the pattern:

$$1001 \times 1001 = 1002001$$

$$1001 \times 1001 \times 1001 = 1003003001$$

71. (3) Birth-rate of Germany = 16

Birth-rate of England = 20

$$\% \text{ Diff.} = \frac{20 - 16}{16} \times 100 = 25\%$$

It is 25% more than 16.

72. (1) Birth-rate of India = 33

Birth-rate of England = 20

$$\therefore \text{Required percentage} = \frac{33}{20} \times 100 = 165\%$$

73. (4) Birth-rate of China = 40

Birth-rate of Germany = 16

$$\therefore \text{Required answer} = \frac{40}{16} = 2.5$$

74. (2) Required ratio $\frac{33}{15} = \frac{11}{5} = 11 : 5$.

75. (2) Birth-rate of England = 20

Birth-rate of New Zealand = 30

Required percentage

$$= \frac{30 - 20}{30} \times 100 = \frac{100}{3} \% = 33\frac{1}{3}\%$$

76. (3) 'Subject to' is a phrasal verb often used in passive form. Thus, it should be as 'are subjected to strong wind'.

77. (3) Change 'options' into 'option'. 'No other' takes singular noun.

88. (1) As it appears 'The film' is a company or organisation, the pronoun should be 'it'.

89. (2) 'Disparity' can only be widened not broadened.