

SSC CHSL GRAND TEST : 171202 - HINTS AND SOLUTIONS

ANSWER KEY

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

1. (4) Except convert, all other words imply squeezing or reducing.

2. (4)

KK
LL
MM
NN
OO
PP

M
N
O
P
Q
R

\downarrow

3. (3)

30	24	19	15	12	10
-6	-5	-4	-3	-2	

4. (4) 10 boys walk 10 km in 10 days, i.e., any number of boys can walk 10 km in 10 days.
5. (4) There is no 'C' letter in the the given word. Therefore, the word RACE cannot be formed.

F R A G M E N T \Rightarrow RAGE

F R A G M E N T \Rightarrow TEAR

F R A G M E N T \Rightarrow MEAN

6. (4) There are two equations and it is not possible to correlate the two equations as per the information given in the question.
7. (1) The sum of upper two numbers gives the lower right number while their product is equal to the lower left number.

First arrangement

$$5 + 4 = 9 \text{ and } 5 * 4 = 20$$

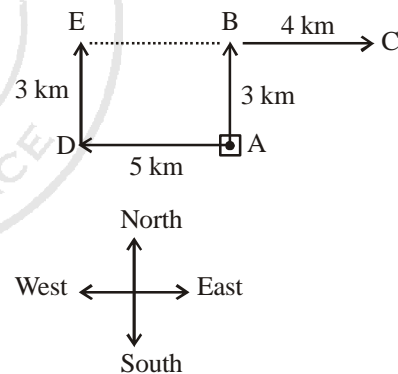
Second arrangement

$$3 + 8 = 11 \text{ and } 3 * 8 = 24$$

Third arrangement

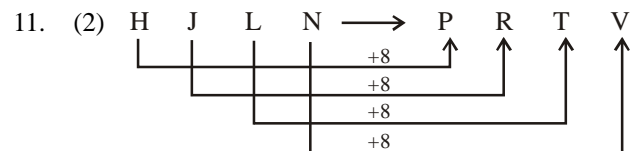
$$9 + 4 = 13 \text{ and } 9 * 4 = 36$$

8. (3)

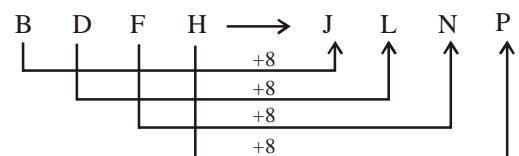


$$EC = EB + BC = (5 + 4) \text{ km} = 9 \text{ km}$$

9. (4) Neither I or II is implicit in the statement. Literate has very general implication. So, it is not necessary that people of Kerala are well educated and cultured.
10. (2) India is famous for mango. Similarly Kiwis are found in New Zealand.



Similarly,

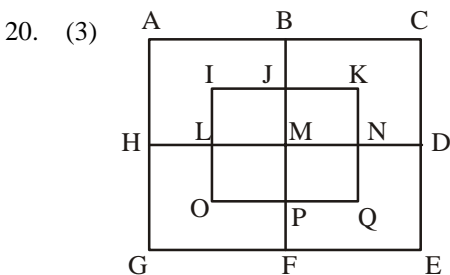


12. (3) DLOC ⇒ COLD
 ECI ⇒ ICE
 ICE is COLD.
 TOH ⇒ HOT
 AET ⇒ TEA
 TEA is HOT.
13. (2) 580 ⇒ 5 + 8 + 0 = 13
 265 ⇒ 2 + 6 + 5 = 13
 373 ⇒ 3 + 7 + 3 = 13
 Similarly,
 490 ⇒ 4 + 9 + 0 = 13
14. (2) Except apple, all others are juicy fruits.
15. (1) Except Diamond, all others are metals. Diamond is an allotrope of carbon.
16. (3) 45, 6, 7
 ⇒ 6 × 7 + 3 = 42 + 3 = 45
 15, 3, 4
 ⇒ 3 × 4 + 3 = 12 + 3 = 15
 23, 4, 5
 ⇒ 4 × 5 + 3 = 20 + 3 = 23
 But,
 ⇒ 6 × 5 + 5 = 30 + 5 = 35

17. (3) Except the number 632, all other numbers are completely divisible by 5.
- $\frac{725}{5} = 145; \frac{840}{5} = 168; \frac{475}{5} = 95$
- But, $\frac{632}{5} = 126.4$

18. (3) B $\xrightarrow{+2}$ D $\xrightarrow{+2}$ F $\xrightarrow{+3}$ I $\xrightarrow{+1}$ J
 D $\xrightarrow{+3}$ G $\xrightarrow{+3}$ J $\xrightarrow{+2}$ L $\xrightarrow{+1}$ M
 B $\xrightarrow{+2}$ D $\xrightarrow{+4}$ H $\xrightarrow{+8}$ P $\xrightarrow{+16}$ F
 A $\xrightarrow{+2}$ C $\xrightarrow{+3}$ F $\xrightarrow{+2}$ H $\xrightarrow{+2}$ J

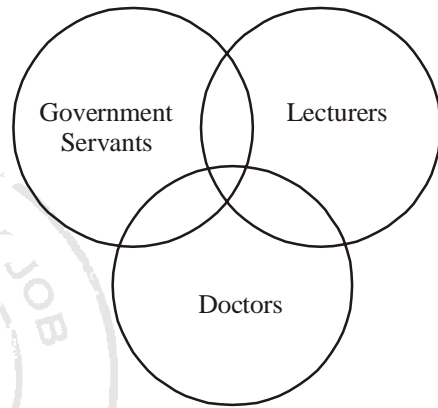
19. (3) Meaningful order of words:
 3. Open
 ↓
 1. Type
 ↓
 4. Save
 ↓
 2. Print
 ↓
 5. Close



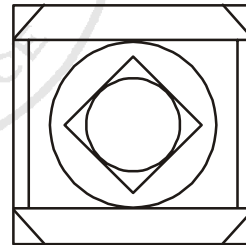
The rectangles are :
 IJPO; JKQP; IKNL; LNQO; ACFG; BCEF; ACDH;
 HDEG;

Squares are also rectangles; there are 10 squares;
 ABMH; BCDM; HMFG; MDEF; IJML; JKNM;
 MNQP; LMPO; ACEG; IKQO

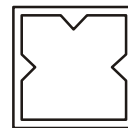
21. (4) Some lecturers may be doctors and vice-versa.
 Some Government servants may be lecturers and vice-versa.
 Some Government servants may be doctors and vice-versa.
 Some Government servants who are lecturers may be doctors.
 Some doctors who are lecturers may be Government servants.



22. (2)



23. (4)



24. (3)

УЯТЯЯУЯ

25. (4)

L ⇒ 55, 66, 76, 89, 98
 O ⇒ 58, 69, 79, 86, 95
 A ⇒ 00, 11, 20, 31, 42
 D ⇒ 03, 13, 22, 32, 43

Option	L	O	A	D
(1)	55	42	36	03
(2)	66	40	31	13
(3)	89	86	11	99
(4)	76	95	20	32

51. (4) 7 jumps of Tom = 5 jumps of Jerry

$$\therefore 8 \text{ jumps of Tom} = \frac{5}{7} \times 8 = \frac{40}{7} \text{ jumps of Jerry}$$

$$\therefore \text{Required ratio} = \frac{40}{7} : 6 = 40 : 42 = 20 : 21$$

52. (4) Difference of correct and incorred marks

$$= 64 - 46 = 18$$

$$\therefore \text{Correct mean} = 52 + \frac{18}{36} = 52.5$$

53. (2) C.P. of cycle = Rs. 1650

Loss = 8%

\therefore S.P. of cycle

$$= \left(\frac{100 - \text{loss \%}}{100} \right) \times \text{C.P.}$$

$$= \frac{100 - 8}{100} \times 1650 = \frac{92 \times 1650}{100} = \text{Rs. 1518}$$

54. (2) Population of the illiterate in the village

$$= (100 - 30)\% \text{ of } 6600$$

$$= \frac{6600 \times 70}{100} = 4620$$

55. (1) S.I. = $\frac{\text{Principal} \times \text{Time} \times \text{Rate}}{100}$

$$= \frac{32000 \times 4 \times 10}{100} = \text{Rs. 12800}$$

$$\text{C.I.} = P \left[\left(1 + \frac{R}{100} \right)^4 - 1 \right]$$

$$= 32000 \left[\left(1 + \frac{10}{100} \right)^4 - 1 \right]$$

$$= 32000 [(1.1)^4 - 1] = 32000 (1.4641 - 1)$$

$$= 32000 \times 0.4641 = \text{Rs. 14851.2}$$

$$\therefore \text{Required difference} = 14851.2 - 12800 = \text{Rs. 2051.2}$$

56. (4) Percentage increase in area = $\left(x + y + \frac{xy}{100} \right) \%$

Here, $x = 100\%$, $y = 100\%$

$$= \left(100 + 100 + \frac{100 \times 100}{100} \right) \% = 300\%$$

57. (2) Volume of metallic sphere

$$= \frac{4}{3} \pi r^3 = \frac{4}{3} \times \pi \times 3 \times 3 \times 3 = 36\pi \text{ cu. cm.}$$

$$\therefore \text{Volume of cone} = 36\pi \text{ cu. cm.} \Rightarrow \frac{1}{3} \pi R^2 h = 36\pi$$

$$\Rightarrow R^2 h = 108 \Rightarrow 6 \times 6 \times h = 108$$

$$\Rightarrow h = \frac{108}{6 \times 6} = 3 \text{ cm.}$$

58. (4) Volume of hemi-spherical bowl = $\frac{2}{3} \pi r^3$

$$= \left(\frac{2}{3} \times \pi \times 15 \times 15 \times 15 \right) \text{ cu. cm.}$$

$$\text{Volume of a bottle} = \pi R^2 h = \pi \times \frac{5}{2} \times \frac{5}{2} \times 6 \text{ cu. cm.}$$

$$\therefore \text{Number of bottles} = \frac{2 \times \pi \times 15 \times 15 \times 15}{3 \times \pi \times \frac{5}{2} \times \frac{5}{2} \times 6} = 60$$

59. (3) $a + b + c = 0$ (given)

$$\therefore a + b = -c \Rightarrow b + c = -a \Rightarrow c + a = -b$$

$$\therefore (a + b - c)^2 + (b + c - a)^2 + (c + a - b)^2$$

$$= (-c - c)^2 + (-a - a)^2 + (-b - b)^2$$

$$= (-2c)^2 + (-2a)^2 + (-2b)^2$$

$$= 4c^2 + 4a^2 + 4b^2 = 4(c^2 + a^2 + b^2)$$

$$60. (1) x - y = 2015 - 2014 = 1$$

$$y - x = 2014 - 2013 = 1$$

$$z - x = 2013 - 2015 = -2$$

$$\therefore x^2 + y^2 + z^2 - xy - yz - zx$$

$$= \frac{1}{2} (2x^2 + 2y^2 + 2z^2 - 2xy - 2yz - 2zx)$$

$$= \frac{1}{2} (x^2 + y^2 - 2xy + y^2 + x^2 - 2yz + z^2 + x^2 - 2zx)$$

$$= \frac{1}{2} [(x - y)^2 + (y - x)^2 + (z - x)^2]$$

$$= \frac{1}{2} [1 + 1 + 4] = \frac{1}{2} \times 6 = 3$$

61. (1) $x + \frac{1}{x} = 2 \frac{1}{12} = \frac{25}{12}$

On squaring both sides,

$$\left(x + \frac{1}{x} \right)^2 = \left(\frac{25}{12} \right)^2$$

$$\Rightarrow x^2 + \frac{1}{x^2} + 2 = \frac{625}{144}$$

$$\Rightarrow x^2 + \frac{1}{x^2} = \frac{625}{144} - 2 = \frac{625 - 288}{144} = \frac{337}{144}$$

$$\Rightarrow \left(x - \frac{1}{x}\right)^2 + 2 = \frac{337}{144}$$

$$\Rightarrow \left(x - \frac{1}{x}\right)^2 = \frac{337}{144} - 2 = \frac{337 - 288}{144} = \frac{49}{144}$$

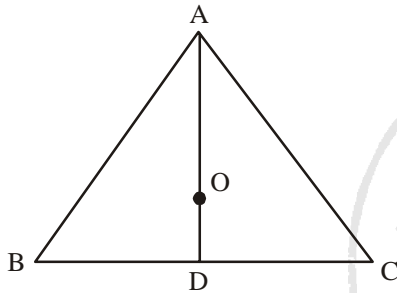
$$\Rightarrow x - \frac{1}{x} = \sqrt{\frac{49}{144}} = \frac{7}{12}$$

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

$$= \left(x^2 + \frac{1}{x^2}\right)\left(x + \frac{1}{x}\right)\left(x - \frac{1}{x}\right)$$

$$= \frac{337}{144} \times \frac{25}{12} \times \frac{7}{12} = \frac{58975}{20736}$$

62. (3)



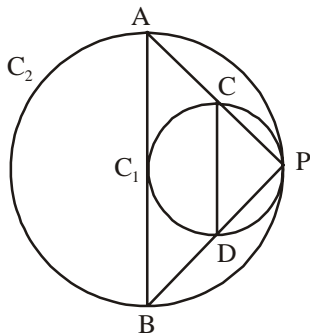
Point 'O' is centroid and AD is median.

$$\therefore AO = \frac{2}{3}AD \Rightarrow 10 = \frac{2}{3}AD$$

$$\Rightarrow AD = \frac{10 \times 3}{2} = 15 \text{ cm}$$

$$\therefore OD = \frac{1}{3}AD = \frac{15}{3} = 5 \text{ cm}$$

63. (1)



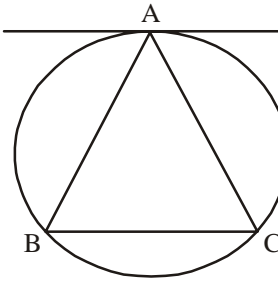
$$\angle BDC = 12^\circ$$

$$\therefore \angle CDP = 180^\circ - 120^\circ = 60^\circ$$

$$CD \parallel AB$$

$$\therefore \angle ABP = 60^\circ = \angle CDP$$

64. (4) D ————— A ————— E

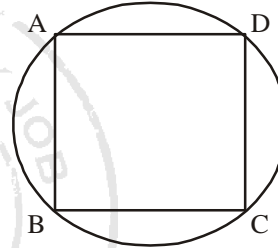


DE || BC

$$\therefore \angle DAB = \angle ABC, \angle EAC = \angle ACB$$

65. (1) $\sin(\theta + 18^\circ) = \cos 60^\circ$
 $\Rightarrow \cos(90^\circ - 30^\circ) = \sin 30^\circ$
 $\Rightarrow \theta + 18^\circ = 30^\circ$
 $\Rightarrow \theta = 30^\circ - 18^\circ = 12^\circ$
 $\therefore \cos 5\theta = \cos 60^\circ = \frac{1}{2}$

66. (1)



ABCD is a concyclic quadrilateral.

$$\angle A + \angle C = \angle B + \angle D = 180^\circ$$

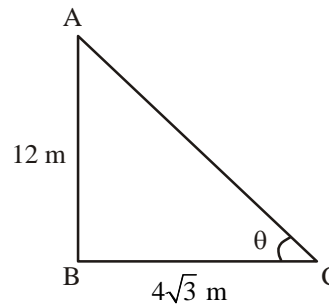
$$\therefore \angle A = 180^\circ - \angle C$$

$$\therefore \cos A = \cos(180^\circ - C) = -\cos C \text{ and } \cos B = -\cos D$$

$$\therefore \cos A + \cos B + \cos C + \cos D$$

$$= \cos A + \cos B - \cos A - \cos B = 0$$

67. (2)



AB = pole = 12 metre

Shadow = BC = $4\sqrt{3}$ metre

From $\triangle ABC$,

$$\tan \theta = \frac{AB}{BC} = \frac{12}{4\sqrt{3}} = \sqrt{3}$$

$$\Rightarrow \tan \theta = \tan 60^\circ \Rightarrow \theta = 60^\circ$$



68. (1) Required unit's digit
 = Unit's digit in the product of $7 \times 5 \times 8 \times 3 \times 9 = 0$

69. (1) $U = \{1, 2, 3, 4, 5, 6, 7, 8\}$

$A = \{1, 2, 3, 4\}$

$A^c = \{x : x \in U \text{ and } x \notin A\} = \{5, 6, 7, 8\}$

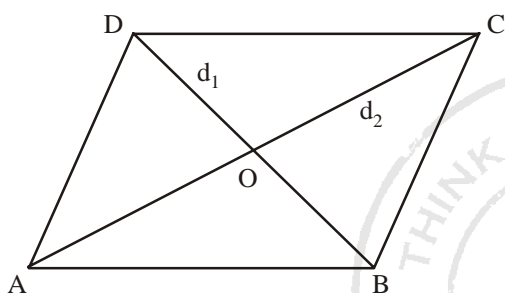
70. (3) Series = $5 + 55 + 555 + \dots + T_n$
 = $5(1 + 11 + 111 + \dots \text{ to } n \text{ terms})$

= $\frac{5}{9}(9 + 99 + 999 + \dots \text{ to } n \text{ terms})$

= $\frac{5}{9}\{(10-1) + (10^2-1) + \dots + (10^n-1)\}$

\therefore nth term = $\frac{5}{9}(10^n - 1)$

71. (1)



$AC = 24 \text{ cm} = d_2$

$BD = 32 \text{ cm} = d_1$

$\therefore OD = 16 \text{ cm}, OC = 12 \text{ cm}$

$\angle COD = 90^\circ$

$\therefore CD = \sqrt{OC^2 + OD^2} = \sqrt{12^2 + 16^2}$

= $\sqrt{144 + 256} = \sqrt{400} = 20 \text{ cm}$

\therefore Perimeter of rhombus = $4 \times CD = 4 \times 20 = 80 \text{ cm}$

72. (3) Number of examinees getting more than average marks
 = $72 + 48 + 24 + 8 = 152$.

73. (4) Number of students who got above 80% marks
 = $24 + 8 = 32$

\therefore Required percent = $\frac{32}{273} \times 100 = 11.72\%$

74. (1) Number of students who got marks above 60% and below 80% = $72 + 48 = 120$

\therefore Required percentage = $\frac{120 \times 100}{273} = 43.95\%$

75. (3) Number of students who got 40% or less marks
 = $2 + 4 + 12 + 26 = 44$

\therefore Required percentage = $\frac{44}{273} \times 100 = 16.11\%$

