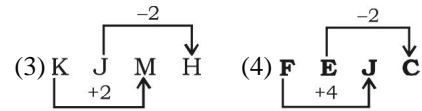




**SSC CHSL - CHT1 : 180232 GRAND TEST**  
**HINTS AND SOLUTIONS**

**ANSWER KEY**

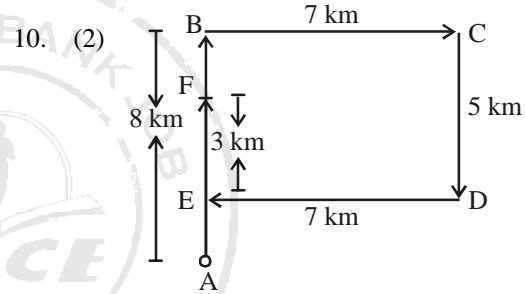
1	(2)	26	(2)	51	(2)	76	(3)
2	(3)	27	(3)	52	(4)	77	(2)
3	(3)	28	(2)	53	(1)	78	(1)
4	(4)	29	(1)	54	(3)	79	(3)
5	(4)	30	(4)	55	(4)	80	(3)
6	(4)	31	(4)	56	(2)	81	(4)
7	(3)	32	(3)	57	(2)	82	(2)
8	(2)	33	(3)	58	(3)	83	(2)
9	(3)	34	(2)	59	(4)	84	(1)
10	(2)	35	(1)	60	(2)	85	(1)
11	(1)	36	(3)	61	(3)	86	(2)
12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



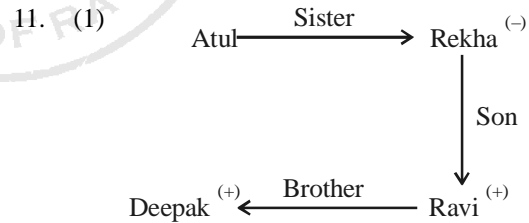
7. (3) A M B R I D G E
8. (2) G A R N I S H → R G A I N H S  
1 2 3 4 5 6 7      3 1 2 5 4 7 6  
Similarly, G E N I O U S → N G E O I S U  
1 2 3 4 5 6 7      3 1 2 5 4 7 6

9. (3) jo ka ra → go for walk → (1)  
ma fo ka → do not walk → (2)  
sa to jo → food for you → (3)

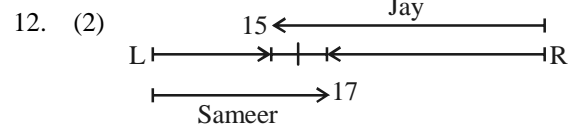
According to equation (1) go = ra.



Required distance = FB = 2 km

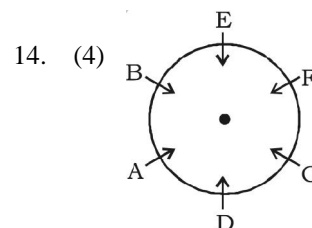


According to the diagram Deepak is Rekha's Son.



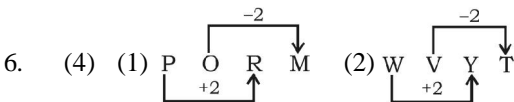
Total number of children, 15 + 15 - 1 = 29

13. (1) According to question (Decending order)  
Praveen > Prakash > Raman > Ajay.



14. (4)

1. (2) 20 : 11 :: 102 : 52  
          ↑          ↑  
          +2+1    +2+1
2. (3) Jade is a costly green stone. Similarly, garnet is a costly red stone.
3. (3) **FRINGE** :: **WIDELY**  
          X<sup>1</sup> ↓ ↓ -1 X<sup>1</sup>   X<sup>1</sup> ↓ ↓ -1 X<sup>1</sup>  
          Q E H M D F   H V C D X K
4. (4) Except option (4), all are spices.
5. (4) Except option (4), all are completely divisible by 9.



15. (4)  $2^3 + 1^3 + 3^3 = 36, 0^3 + 4^3 + 3^3 = 91$

Similarly,  
 $4^3 + 2^3 + 1^3 = 73$

16. (3)  $(5 \times 6 \times 4) \div 12 = 10$

$(6 \times 7 \times 5) \div 21 = 10$

Similarly,  
 $(4 \times 8 \times 10) \div 32 = 10$

17. (4)  $a \underline{b} \underline{c} / a \underline{a} \underline{b} \underline{c} / a \underline{a} \underline{b} \underline{c} / \underline{a} \underline{a} \underline{b} \underline{b} \underline{c} \underline{c}$

18. (1)  $3 \times 1^2 = 3$

$3 \times 2^2 = 12$

$3 \times 3^2 = 27$

$3 \times 4^2 = 48$

$3 \times 5^2 = 75$

$3 \times 6^2 = 108$

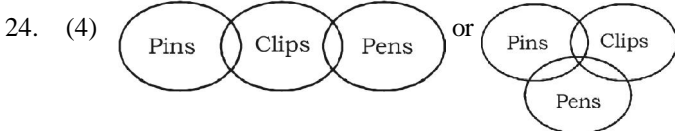
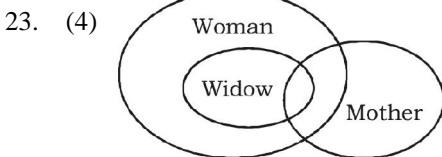
Similarly,  
 $3 \times 7^2 = 147$

19. (3)  $\begin{matrix} 2 & 9 & 28 & 65 & 126 \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ 1^3+1 & 2^3+1 & 3^3+1 & 4^3+1 & 5^3+1 \end{matrix}$

Raw Metal	Reaction	Purification	Metal
3	2	4	1
Alloy			
5			

21. (1)  $4 + 16 \times 5 \div 8 - 5 = 4 + 16 \times \frac{5}{8} - 5$   
 $= 4 + 2 \times 5 - 5 = 4 + 10 - 5 = 14 - 5 = 9$

22. (2)



Conclusions - I -  $\times$ , II -  $\times$

25. (3)

51. (2) Total sum =  $14.75 \times \frac{100}{70} \times \frac{100}{60} \times \frac{100}{80} = \text{Rs.} 341.51$

52. (4) Sum of temperature of first 3 days =  $3 \times 24^\circ\text{C} = 72^\circ\text{C}$   
Sum of temperature of next 3 days =  $3 \times 27^\circ\text{C} = 81^\circ\text{C}$   
Sum of temperature of whole week  
=  $7 \times 26.5^\circ\text{C} = 185.5^\circ\text{C}$   
The temperature of the last day  
=  $(185.5^\circ\text{C} - 72^\circ\text{C} - 81^\circ\text{C}) = 32.50^\circ\text{C}$

53. (1) Total quantity of milk  
=  $4 \times 0.8 + 7 \times 0.7 + 10 \times 0.06$   
=  $3.2 + 4.9 + 6.0 = 14.1$   
Total quantity of water =  $21 - 14.1 = 6.9$

Milk : water =  $\frac{14.1}{6.9} = \frac{141}{69} = \frac{47}{23}$ .

54. (3) Varun's work for 4 hr. =  $4 \times \frac{1}{16} = \frac{1}{4}$  part

Varun gets Rs.  $\left(\frac{1}{4} \times 360\right) = \text{Rs.} 90$ .

Akash's work for 4hr. =  $4 \times \frac{1}{18} = \frac{2}{9}$  part

Akash gets = Rs.  $\frac{2}{9} \times 360 = \text{Rs.} 80$ .

So, Arun gets = Rs.  $360 - \text{Rs.} (90 + 80) = \text{Rs.} 190$ .

55. (4) Distance = Difference  $\times \frac{\text{Sum of speed}}{\text{Difference in Speed}}$

Distance =  $225 \times \frac{155}{25} = 9 \times 155 = 1395 \text{ km}$

56. (2) Speed of bus =  $\frac{15 \times 60}{60} \times \frac{18}{5} = 54 \text{ km/hr}$

57. (2)  $R_1 = 6\%, R_2 = 8\%, R_3 = 10\%, R_4 = 12\%$

$A = 4800 \left(1 + \frac{6}{100}\right) \left(1 + \frac{8}{100}\right) \left(1 + \frac{10}{100}\right) \left(1 + \frac{12}{100}\right)$   
 $= 4800 \times \frac{53}{50} \times \frac{27}{25} \times \frac{11}{10} \times \frac{28}{25} = 6769.88$

Compound interest =  $6769.88 - 4800 = \text{Rs.} 1969.88$

58. (3) Let the capacity of the tank = x litres

Quantity of water emptied by the leak in 1hr. =  $\frac{x}{25} \text{ l.}$

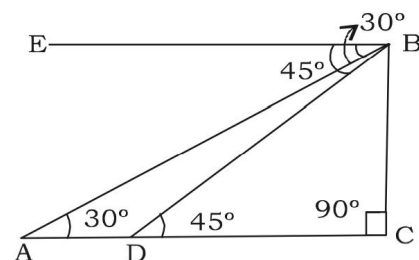
Quantity of water filled by the tap in 1 hour = 180 litre

$\therefore \frac{x}{25} - \frac{x}{40} = 180$

$\Rightarrow \frac{8x - 5x}{200} = 180 \Rightarrow \frac{3x}{200} = 180 \Rightarrow x = 12000$

Capacity of tank = 12000 l

59. (4) Let BC = h, DC = a, AD = 1 km



In  $\triangle ABC$

$$\tan 30^\circ = \frac{h}{1+a} \Rightarrow \frac{1}{\sqrt{3}} = \frac{h}{1+a} \Rightarrow a = \sqrt{3}h - 1$$

In  $\triangle BDC$ ,

$$\frac{h}{a} = 1 \Rightarrow h = a$$

$$h = \sqrt{3}h - 1 \Rightarrow 1 = h(\sqrt{3} - 1)$$

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

$$\therefore h = \frac{2.73}{2}$$

height of aeroplane = 1.365 km

60. (2) After division,

$$\frac{2}{5} = 0.40, \frac{3}{7} = 0.43, \frac{2}{9} = 0.22, \frac{11}{7} = 1.57, \frac{13}{9} = 1.44$$

By arranging in descending order.

$$\frac{11}{7}, \frac{13}{9}, \frac{3}{7}, \frac{2}{5}, \frac{2}{9}$$

61. (3) Let the sum be  $x$  and rate of interest per annum be  $r$

$$4514 = x \left( 1 + \frac{r}{100} \right)^3 \quad \dots(1)$$

$$5002 = x \left( 1 + \frac{r}{100} \right)^6 \quad \dots(2)$$

divide equation (2) by equation (1)

$$\frac{5002}{4514} = \left( 1 + \frac{r}{100} \right)^3$$

$$\Rightarrow \frac{41}{37} = \left( 1 + \frac{r}{100} \right)^3$$

Substitute the value in eq (1)

$$4514 = x \times \frac{41}{37} \Rightarrow x = \frac{4514 \times 37}{41}$$

$$\therefore x = \text{Rs. } 4073.609 = 4073.60$$

62. (4) Percentage loss =  $\frac{20 \times 20}{100} = 4\%$ .

63. (1) Let the cost price be = Rs. 100  
 $\therefore$  Marked price = Rs. 136

$$\text{Selling price} = \frac{75 \times 136}{100} = \text{Rs. } 102.$$

$$\text{Profit} = \text{Rs. } (102 - 100) = \text{Rs. } 2$$

$$\therefore \text{Profit percentage} = 2\%$$

64. (3)  $a : b : c$

$$2 : 5 : 5$$

$$4 : 4 : 3$$

$$\hline 8 : 20 : 15$$

$$\frac{a}{c} = \frac{8}{15} \Rightarrow \frac{a^2}{c^2} = \frac{64}{225}$$

Using compendo and dividendo rule

$$\frac{a^2 + c^2}{a^2 - c^2} = \frac{64 + 225}{64 - 225} = -\frac{289}{161}$$

65. (3)  $\cot A = \sqrt{3} \Rightarrow \cot A = \cot 30^\circ \Rightarrow A = 30^\circ$

$$\cot B = 1 \Rightarrow \cot B = \cot 45^\circ \Rightarrow B = 45^\circ$$

$$\sin A \sin B + \cos A \cos B$$

$$= \sin 30^\circ \sin 45^\circ + \cos 30^\circ \cos 45^\circ$$

$$= \frac{1}{2} \times \frac{1}{\sqrt{2}} + \frac{\sqrt{3}}{2} \times \frac{1}{\sqrt{2}} = \frac{\sqrt{3} + 1}{2\sqrt{2}}$$

66. (4)  $(d + e + f)^2 = d^2 + e^2 + f^2 + 2de + 2ef + 2fd$

$$(d + e + f)^2 = d^2 + e^2 + f^2 + 2(de + ef + fd)$$

$$(16)^2 = 154 + 2(de + ef + fd)$$

$$\Rightarrow 256 - 154 = 2(de + ef + fd)$$

$$\therefore de + ef + fd = 51$$

67. (2)  $S = 1 - \frac{1}{10} + \frac{1}{10^2} - \frac{1}{10^3} + \dots \infty$

It is Geometric series to infinity

$$a = 1 \text{ and common ratio } (-r) = -\frac{1}{10}$$

$$\therefore S_\infty = \frac{a}{1-r} = \frac{1}{1 - \left(-\frac{1}{10}\right)} = \frac{10}{11} = 0.90$$

$\therefore$  The value correct to 6 places of decimal = 0.909090

68. (1) Volume of original cone  $(V_1) = \frac{1}{3} \pi r^2 h$

$$\text{Radius of new cone } (r_1) = \frac{r}{2}$$

$$\text{Height } (h_1) = h$$

$$\text{Volume } (V_2) = \frac{1}{3} \pi r_1^2 h_1 = \frac{1}{3} \pi \times \frac{r^2}{4} \times h = \frac{\pi}{12} r^2 h$$

$$\text{Required ratio } \left( \frac{V_2}{V_1} \right) = \frac{\pi r^2 h \times 3}{12 \times \pi r^2 h} = \frac{1}{4}$$

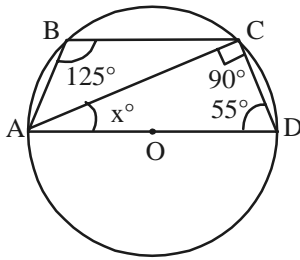
69. (1)  $\frac{AB}{AD} = \frac{BC}{CD} \Rightarrow \frac{4a}{7a} = \frac{3b+9}{14b}$

$$\Rightarrow 56b = 21b + 63 \Rightarrow 35b = 63$$

$$\Rightarrow b = \frac{63}{35} = \frac{9}{5}$$

$$\therefore a = 2b = 2 \times \frac{9}{5} = \frac{18}{5}$$

70. (2)



AD is diameter of circle, so  $\angle ACD = 90^\circ$

& ABCD is a cyclic quadrilateral

So,  $\angle ABC + \angle ADC = 180^\circ$

$125^\circ + \angle ADC = 180^\circ \Rightarrow \angle ADC = 55^\circ$

In  $\triangle ACD$ ,

$\angle x + \angle ACD + \angle CDA = 180^\circ$

$\Rightarrow x + 90 + 55 = 180 \Rightarrow x = 35^\circ$

71. (1)

$lb = 72, bh = 56, hl = 63$

$(lb \times bh \times lh) = 56 \times 72 \times 63$

$\Rightarrow (lbh)^2 = 56 \times 72 \times 63$

$\Rightarrow lbh = \sqrt{56 \times 72 \times 63}$

$\therefore \text{Volume}(lbh) = 504 \text{ cm}^3.$

72. (1)

Let original radius = R

$\therefore \text{Circumference} = 2\pi R$

New radius = 5R

New circumference =  $10\pi R$

Circumference increased

$= (10\pi R - 2\pi R) = 8\pi R$

$= 4 \times \text{original circumference}$

$\therefore 4 \text{ times}$

73. (3)

Total slum population

$= 28\% \text{ of } 64.8 \text{ lakh} + 22\% \text{ of } 48.3 \text{ lakh}$

$= \frac{28}{100} \times 64.8 + \frac{22}{100} \times 48.3$

$= 18.144 \text{ lakh} + 10.626 \text{ lakh} = 28.77 \text{ lakh}$

74. (4)

Highest slum population is 38%. It is present in A.

75. (3)

Slum population of city B

$= 34\% \text{ of } 78.4 \text{ lakh}$

$= \frac{34}{100} \times 78.4 \text{ lakh} = 26.65 \text{ lakh} = 26.5 \text{ lakh}$

