SSC Test Series -22. Solution

(New Pattern)

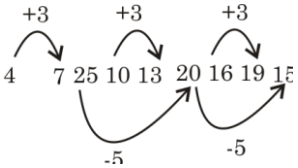
1	C	26	A	51	D	76	C
2	A	27	B	52	B	77	B
3	A	28	D	53	A	78	B
4	B	29	C	54	A	79	A
5	A	30	B	55	C	80	A
6	B	31	B	56	B	81	B
7	C	32	D	57	B	82	B
8	A	33	C	58	C	83	B
9	B	34	B	59	B	84	C
10	A	35	B	60	B	85	C
11	A	36	B	61	A	86	A
12	B	37	C	62	C	87	D
13	B	38	C	63	A	88	B
14	B	39	C	64	B	89	B
15	B	40	C	65	D	90	C
16	B	41	C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

REASONING ABILITY

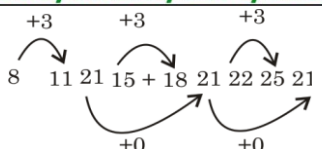
1. (C) As 'indollence' and 'Work' are opposite to each other, in the same way 'Taciturn' and 'Talkaive' are opposite to each other.
2. (A) 'Jade' is a 'Green' coloured previous stone, in the same way 'Garent' ia a 'Red' coloured previous stone.
3. (A) As, $61 = (4)^3 - 3$ $\quad 121 = (5)^3 - 4$

   and $\quad 337 = (7)^3 - 6$

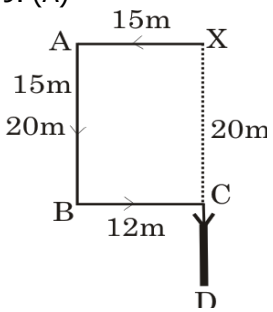
   Therefore, $? = (6)^3 - 5 = 211$
4. (A) Loaf, Sourdough, and Pumpernickel as types of bread. A **Rye** is not a type of bread.
5. (B) The Cough, Table and chair are type of furniture whereas the **Rug** is not a furniture.
6. (C) Except (C) the sum of the digits of both the numbers in rest of the options are same.
7. (A)



8. (B)



9. (A)



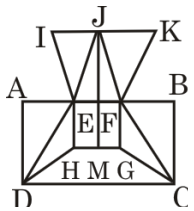
Required distance = XD = XC + CD
= 20 + 12
= 32 m in south direction

10. (A) Clearly, Conclusion I directly follows from the given statement. Also, it is mentioned that old ideas are replaced by new ones, as thinking changes with the progress in time. So, Conclusion II does not follow.
11. (B) The sitting arrangement is as follows.

    • • • • • •

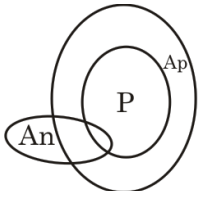
    P X S Z R A

    Therefore, right of P is X.
12. (B)



The figure is given below :
The horizontal lines are IK, AB, HG and DC i.e. 4 in number.
The vertical lines are AD, EH, JM, FG and BC i.e. 5 in Number.
The slanting line are IE, Je, JF, KF, DE, DH, FC and GC i.e. 8 in number.
Thus, there are 4 + 5 + 8 = 17 straight lines in the kgiven figure.

13. (B)
14. (B)



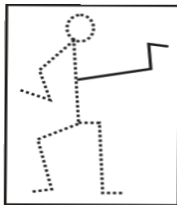
I. 5 II. 3

15. (B) At 5 clock, the hands are 25 minutes apart. To be at right angles and that too between 5 : 30 and 6, then minute hand has to gain (25 + 15) = 40 min. spaces.
    ∴ 55 min. spaces are gained in 60 min.

$\therefore$ 40 min. spaces are gained in $\left(\frac{60}{55}\times 40\right)\text{min} = 43\frac{7}{11}\text{min}.$

$\therefore$ Required time $= 43\frac{7}{11}$ min. past 5.

16. (D)



17. (A)

Here the common faces with number 3, are in same positions. Hence 6 is opposite to 2 and 5 is opposite to 1. Therefore 4 is opposite to 3.

18. (C)

19. (B) The series is abb/aaabbb/aaaabbbb/a.

20. (B)

21-25. See Answersheet

QUANTITATIVE APTITUDE

26. (A) Let the middle number be x.

According to question,

$$x-2+x+x+2 = 176\times\frac{1}{4}-14$$

$\Rightarrow$ 3x = 44 – 14 $\Rightarrow$ x = 10

27. (B) The required answer = 13 + 23 – 5 = 31

28. (D) $x = \sqrt{72-\sqrt{72-\sqrt{72----\infty}}}$

$\Rightarrow x^2 = 72-\sqrt{72-\sqrt{72---\infty}}$

There are many possible value of $\frac{x}{y}$.

$\Rightarrow x^2 = 72-x$

$\Rightarrow x^2+x-72=0$

$\Rightarrow x^2+9x-8x-72=0$

$\Rightarrow (x+9)(x-8)=0$

$\Rightarrow x = 8,-9$

$y = \sqrt{20-\sqrt{20-\sqrt{20----\infty}}}$

$\Rightarrow y^2 = 20-\sqrt{20-\sqrt{20---\infty}}$

$\Rightarrow y^2 = 20-y$

$\Rightarrow y^2+y-20=0$

$\Rightarrow (y+5)(y-4)=0$

$\Rightarrow y = 4,-5$

So, can't be determined is the answer.

29. (C) 5 leap of hound = 6 leap of here.

$\therefore$ 7 leaps of hound $= \frac{6}{5}\times 7$ leap of here

$\therefore$ rate of hound : rate of hare = $= \frac{42}{5} : 8$

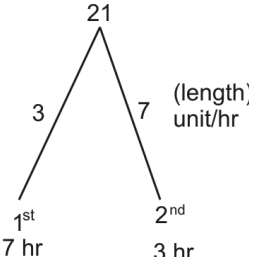
30. (B)

	1 Rs.		50-P		25-P
Number of Coins	1	:	1	:	1
Value	1	:	$\frac{1}{2}$	:	$\frac{1}{4}$

$= \frac{7}{4} \rightarrow 43.75$

$\therefore 1 \rightarrow 25$

31. (B)



Let after t hrs their height becomes in ratio 3 : 1.

$$\frac{21-3t}{21-7t} = \frac{3}{1}$$

$\Rightarrow 21-3t = 63-21t$

$\Rightarrow 21-3t = 63-21t$

$\Rightarrow a8t = 42$

$\Rightarrow t = \frac{42}{18}\text{hrs}$

$\Rightarrow t = 2$ hr 20 min

32. (D) Let marked price = x

and cost price = y

$$x\times\frac{15}{16}\times\frac{96}{100} = y\times\frac{135}{100}$$

$$\frac{x}{y} = \frac{3}{2}$$

Required $\% = \frac{3-2}{2}\times 100 = 50\%$

33.

In Ist months $\frac{40}{100}\times 2000 = 800$

$$\frac{a}{100}\times 1000 = 100$$

$$\Rightarrow a = \frac{100}{1000}\times 100 = 10\%$$

34. (B) SI for 2 years = Rs. 200

SI for 1 year = Rs. 100

CI for 2 years

= SI for 2 years + Interest on 1st year's SI

$$= 200+\frac{100\times 20}{100} = \text{Rs.}20$$

35. (B) $\frac{A+C}{B}=\frac{2\times4}{1\times4}=\frac{8}{9}$

$\frac{A+B}{C}=\frac{3\times3}{1\times3}=\frac{9}{3}$

$\Rightarrow$ B = 4, C = 3, A = 5

(A + B + C)'s 1 day work = 4 + 3 + 5 = 12

unit 12 day's = 12 × 12 = 144 unit

A will take $\frac{144}{5}=28\frac{4}{5}$ days

B will take $\frac{144}{4}=36$ days

C will take $\frac{144}{3}=48$ days

36. (B) Required time = $\sqrt{4\times9}$

= 6 minutes

37. (C) tan 2A = tan {(A + B) + (A – B)

$=\frac{\tan(A+B)+(\tan(A-B)}{1-\tan(A+B)\tan(A-B)}$

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

$=\frac{5}{5}=1=\sin90°$

38. (C) (1 + cot A – cosec A) × (1 + tan A + Sec A)

$\Rightarrow\left(\frac{\sin A+\cos A-1}{\sin A}\right)\times\left(\frac{\sin A+\cos A+1}{\cos A}\right)$

$=\frac{(\sin A+\cos A)^2-1^2}{\sin A.\cos A}$

$=\frac{\sin^2 A+\cos^2 A+2\sin A.\cos A-1}{\sin A.\cos A}$

39.(D)

$x=\sin^2 5°+\sin^2 10°+\sin^2 15°+-----+\sin^2 85°+\sin^2 90°$

$\therefore \sin^2 5°+\sin^2 85°=1$

$\sin^2 10°+\sin^2 80°=1$

$\sin^2 45°=\frac{1}{2}$

$\sin^2 90°=1$

$So, x=8+\frac{1}{2}+1$

$\Rightarrow x=9\frac{1}{2}$

40. (C) $x=\sqrt{\frac{\sqrt{5}+1}{\sqrt{5}-1}\times\frac{\sqrt{5}+1}{\sqrt{5}+1}}$

$\Rightarrow x=\sqrt{\frac{(\sqrt{5}+1)^2}{5-1}}=\sqrt{\frac{(\sqrt{5}+1)^2}{4}}=\frac{\sqrt{5}+1}{2}$

Now, $5x^2-5x-1$

$=5\left(\frac{\sqrt{5}+1}{2}\right)^2-5\left(\frac{\sqrt{5}+1}{2}\right)-1$

$=5\frac{(5+1+2\sqrt{5})}{4}-5\left(\frac{\sqrt{5}+1}{2}\right)-1$

$=\frac{15+5\sqrt{5}-5\sqrt{5}-5-2}{2}$

$=4$

41. (B) $x=\frac{\sqrt{3}}{2}$

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

$=\sqrt{\frac{4+2\sqrt{3}}{4}}=\sqrt{\frac{(\sqrt{3}+1)^2}{4}}$

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

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

$=\sqrt{\frac{4-2\sqrt{3}}{4}}=\sqrt{\frac{(\sqrt{3}-1)^2}{4}}$

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

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

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

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

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

$=\frac{2}{\sqrt{3}}$

42. (A) $4^{61}+4^{62}+4^{63}+4^{64}$

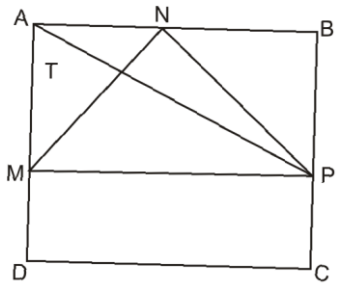
$=4^{61}(1+4+4^2+4^3)$

$=4^{61}(1+4+16+64)$

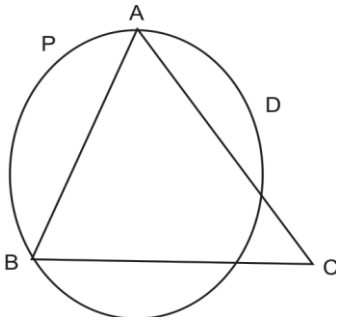
$=4^{61}\times85$

Which is divisible by 17.

43. (C)



If area $\Delta ATM = 1$
then area $\Delta AMN = 2$
$\therefore$ area ABPM = 8
area $\Delta MNP = 8 - 2 - 2 = 4$
area $\Delta TMP - 4 - 2 = 2$
$\Delta ATM : \Delta TMP = 1 : 2$
44. (A)
45. (B)



AB = AC
D is mid point of AC
$AP \times AB = AD^2$ (Property)

$$AP \times AB = \left(\frac{AB}{2}\right)^2$$

$$AP = \frac{AB}{4}$$

$$\therefore PB = \frac{3}{4}AB$$

$$PB : PA$$

$$= \frac{3}{4}AB : \frac{1}{4}AB$$

$$= 3 : 1$$

46. (B) Let sides be 4x, 5x, 6x
inradius

$$= \frac{\text{Area of } \Delta}{S}$$

$$S = \frac{4x + 5x + 6x}{2} = \frac{15x}{2}$$

$$\Rightarrow 4 = \frac{\Delta}{\frac{15}{2}x}$$

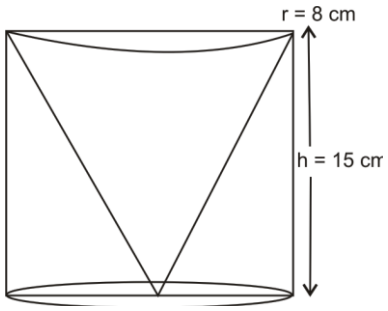
$\Rightarrow$ Area of Δ = 30x
Smallest altitude will be on the longest side

$$\text{Area of } \Delta = \frac{1}{2} \times h \times 6x$$

$$\Rightarrow 30x = \frac{1}{2} \times h \times 6x$$

$$\Rightarrow h = 10 \text{ cm.}$$

47. (B)



$$l = \sqrt{8^2 + 15^2}$$

$$\Rightarrow l = \sqrt{64 + 225}$$

$$\Rightarrow l = \sqrt{289}$$

$$\Rightarrow l = 17 \text{ cm}$$

Total surface area

$$= \pi r^2 + 2\pi rh + \pi rl$$

$$= \pi[64 + 2 \times 8 \times 15 + 8 \times 17]$$

$$= 440\pi \text{ cm}^2$$

48. (B) 35% of the total cost = Rs. 17500
$\therefore$ 15% of total cost

$$\text{Rs.} \frac{17500 \times 15}{35} = \text{Rs.}7500$$

49. (D) $100\% = 360^\circ$

$$\therefore 1\% = \frac{360^\circ}{100}$$

$$10\% = \frac{360^\circ \times 10}{100} = 36^\circ$$

50. (B) The required percentage

$$= \frac{10 \times 100}{35} = 28.6\%$$