

**DATE : 03-12-2017**

**CLASS : VII**

**HINTS & SOLUTIONS**

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

23. Non-metallic oxides dissolve in water to give acids. These acids turn the blue litmus into red. For example:

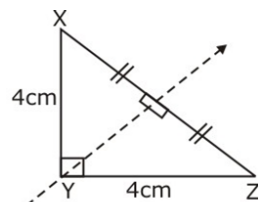
36. In the given triangle ABC, side BC is opposite to angle A.

37.  $[(6^0 - 2^0) \times (6^0 + 2^0)] = [(1 - 1) \times (1 + 1)] = 0 \times 2 = 0$

38. As the given expression  $xy$  contains only one term, hence, it is a monomial.

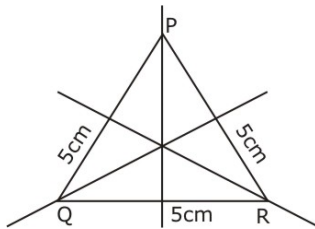
39. Arranging the given data in ascending order.  
32, 32, 35, 35, 37, 40, 42, 42, 45, 45, 51 and 51.  
Here 32, 35, 42, 45 and 51 all occur two times.  
Hence, the given data has 5 modes.

41.



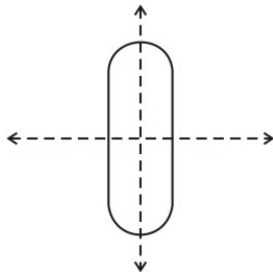
There will be only one line of symmetry, i.e., bisector of angle XYZ.

42.



There are three lines of symmetry, bisector of each angle.

43. Circumference is a kind of perimeter. It is the length covered around a circular region.
44. We know that the exterior angle of a triangle is always equal to the sum of its two interior opposite angles. Therefore, Exterior angle  $ABF = \angle A + \angle C$ .
46. The terms in the given expression  $3mn^2 + 12$  are  $3mn^2$  and 12  
The factors of the term,  $3mn^2$  are 3, m and  $n^2$   
Coefficient of m =  $3n^2$
47. Range = largest value – smallest value =  $60 - 35 = 25$
49. As the given figure matches itself 6 times, therefore this figure has rotational symmetry of order 6.
- 50.



The given figure has two lines of symmetry.

51. Area of the shining surface  
 $= (\pi \times 2.6^2) - (\pi \times 1.3^2)$   
 $= \pi \times (2.6^2 - 1.3^2)$   
 $= \pi \times (2.6 - 1.3) \times (2.6 + 1.3)$   
 $= \pi \times 1.3 \times 3.9$   
 $= 3.14 \times 5.07$   
 $= 15.92 \text{ inches}^2$
52. By angle sum property of a triangle,  
 $(2x + 20)^\circ + (x + 30)^\circ + (2x - 10)^\circ = 180^\circ$   
 $x = 28^\circ$   
 Therefore, required angles =  $76^\circ$ ,  $58^\circ$  and  $46^\circ$ .  
 Explanation :  
 $[(60 - 20) \times (60 + 20)] = [(1 - 1) \times (1 + 1)]$   
 $= 0 \times 2 = 0$

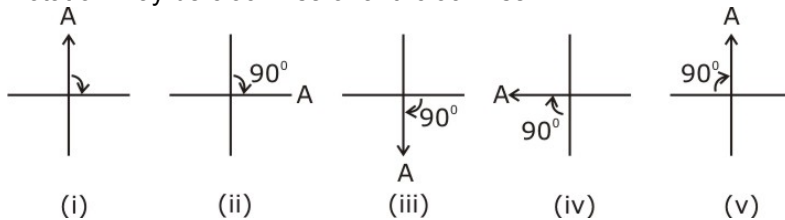
53.

$$\begin{aligned}
 & \frac{4^{2^3} \times 4^0 \times 4^{-1}}{2^8} \\
 &= \frac{4^{2 \times 3} \times 4^0 \times 4^{-1}}{2^8} \\
 &= \frac{4^{6+0-1}}{2^8} \\
 &= \frac{4^5}{2^8} \\
 &= \frac{(2 \times 2)^5}{2^8} \\
 &= \frac{(2^2)^5}{2^8} \\
 &= \frac{2^{10}}{2^8} \\
 &= 2^{10-8} \\
 &= 2^2 \\
 &= 4
 \end{aligned}$$

55. Arithmetic Mean =  $\frac{2+9+3+6}{4}$   
 $= \frac{20}{4} = 5$

58. Reflection is the effect of a mirror is to produce an image of the same shape and size but in opposite sense.

58. Rotation may be clockwise or anti-clockwise.

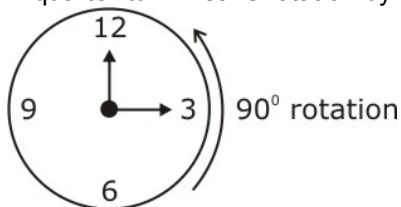


In the above figures, a point 'A' is rotated by 90° and after complete a full-turn point 'A' reaches its original position.

59. Area of the path = area of the rectangle PQSR – area of the rectangle ABDC  
 $= \{[30 + (4 + 4)] \times [25 + (4 + 4)]\} - (30 \times 25)$   
 $= 38 \times 29 - 750$   
 $= 1254 - 750$   
 $= 504 \text{ m}^2$

60. Face of the cube is always in the shape of square because in cube each sides are equal.

61. A quarter-turn means rotation by 90°.

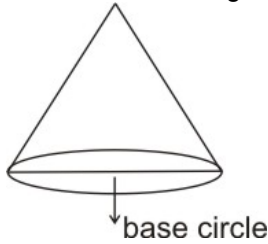


62. We know that, area of triangle =  $\frac{1}{2} \times \text{base} \times \text{height}$

$$21 \text{ cm}^2 = \frac{1}{2} \times \text{BC} \times 3 \text{ cm}$$

or  $\text{BC} = 14 \text{ cm}$

63. Its clear in below figure



64. In the given figure, there are precisely two positions of rotation through the angles  $90^\circ$  and  $180^\circ$ .

65. Perimeter of the triangle =  $a + b + c$  [where a, b and c = sides of the triangle]

$$60 = 20 + 12 + c$$

or  $c = 28 \text{ cm}$

67. (A) 'Guitar' is the string operated musical instrument.

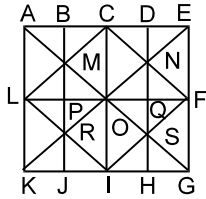
68. The figure is labelled as shown.

Clearly, there are 3 horizontal lines namely AE, LF and KG.

There are 5 vertical lines : AK, BJ, CI, DH and EG.

There are 6 slanting lines : LC, KE, IF, LI, AG and CF.

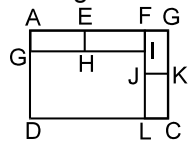
Thus, there are  $3 + 5 + 6 = 14$  straight lines in the figure



Hence, the answer is (B).

70. (D) Only 'Rubber' is the tree product.

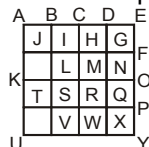
71. The figure is labelled as shown :



Simplest rectangles are AEHG, EFIH, FBKJ, JKCL and GILD. i.e. there are 5 such rectangles. The rectangles composed of two components each are AFIG and FBCL. Thus, there are 2 such rectangles. Only one rectangles, namely AFLD is composed of 3 components and only one rectangle, namely ABCD is composed of 5 components. Thus, there are  $5 + 2 + 1 + 1 = 9$  rectangles in the figure. Hence, (D) is the answer.

73. (E) All others are the drinks.

74. Possible squares are :



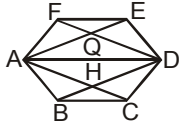
1. ABIJ, 2. BCHI, 3. CDGH, 4. DEFG, 5. IJKL, 6. HTLM, 7. GHMN, 7. FGND, 9. KLST,

10. LMRS, 11. MNQR, 12. NOPQ, 13. STUV, 14. RSVW, 15. QRWX, 16. PQXY, 17. ACMK, 18. BDNL,  
 19. CEOM, 20. JHRT, 21. IGQS,  
 22. HFPR, 23. KMWU, 24. LNXV, 25. MOYW  
 26. ADQT, 27. BEPS, 28. JGXU, 29. IFYV,  
 30. AEYU

76. (D) All other terms are used to represent human behavioural personality factors.

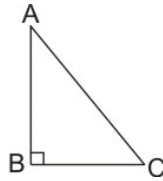
79. (D) All other terms are related to different exercises.

80. The possible pentagons in the given figure are :

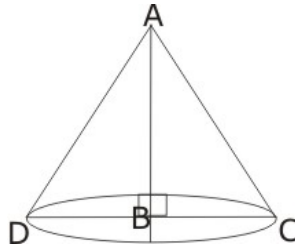


EFACD, FABDE, BAFDC, CBAED, AGDCB, AHDEF.

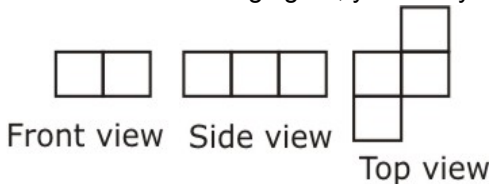
96. A triangle ABC is given, here AB is base.



And, after rotating, we have a cone.



97. Observe the following figure, you easily find different views.



98. Let radius of the circle = r cm.

Given

circumference of the circle = diameter of the circle + 30

i.e.,  $2\pi r = 2r + 30$

$$2r(\pi - 1) = 30$$

$$r \left\{ \left( \frac{22}{7} \right) - 1 \right\} = 15$$

or  $r = 7$  cm.