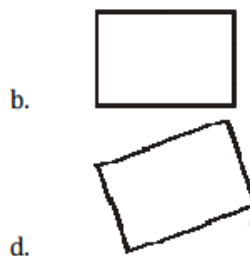
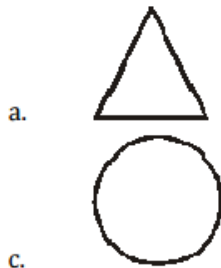


Class: VII
Subject: Math's
Topic: Understanding shapes
No. of Questions: 20

Q1. Flat surfaces of a solid shape are called its edges. (True/False)

Sol. False

Q2. Which figure does represent circle?



Sol. C

Q3. What is an oblique sketch?

Sol. An oblique sketch does not have proportional lengths. Still conveys all the important aspects of the appearance of the solid.

Q4. If two cuboids of dimensions $3\text{ cm} \times 3\text{ cm} \times 6\text{ cm}$ are placed height by height, what would be the dimensions of the resulting figure be?

Sol. Length = $3\text{ cm} + 3\text{ cm} = 6\text{ cm}$, Breadth = 3 cm , Height = 6 cm

Q5. The number of vertices of a cuboid is _____.

Sol. 8

Q6. How many wooden cubical blocks of edge 12 cm can be cut from another cubical block of wood of edge 3m and 60cm?

Sol. 27,000 blocks (Number of Blocks = Volume of wood/ Volume of blocks to be cut out)

Q7. A village, having population of 4000, requires 150 litres water per head day. It has a tank measuring 20 m by 15 m by 6 m. For how many days the water of this tank will last?

Sol. 3 days (Volume of tank/ (Volume reqd by each*Population))

Q8. A brick measures 24 cm by 12 cm by 10 cm. How many such bricks are needed to construct a wall of length 5m, height 2.88 and thickness 20 cm?

Sol. 1000 bricks (Same as question 6)

Q9. Write the number of faces, edges and vertices in the solids given below.

- a. Prism
- b. Brick

Sol.

- a. Faces = 5, edges = 9, vertices = 6
- b. Faces = 6, edges = 12, vertices = 8.

Q10. Give two examples of solid shapes.

Sol. Cylinder and Sphere

Q11. Find the surface area of a wooden box whose shape is of a cube of edge 15 cm.

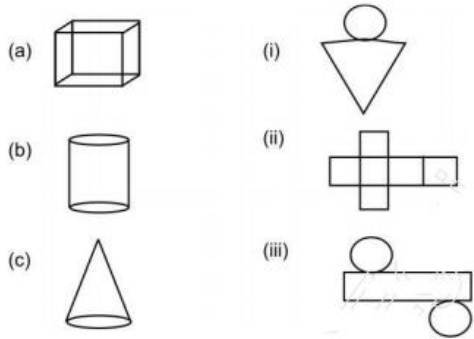
Sol. the Surface area of each side of a cube can be found as

$$\text{Surface area} = \text{side}^2 = 15^2 = 225$$

Now, since the cube has all the sides equal and there are a total of 6 sides.

Therefore, the total surface area will be = $6 \times 225 = 1350 \text{ cm}^2$

Q12. Match the nets with appropriate solids:

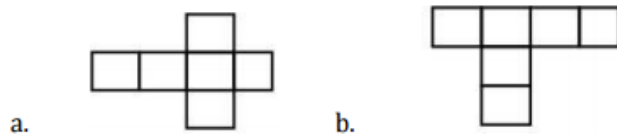


Sol. [a] – (ii)

[b] – (iii)

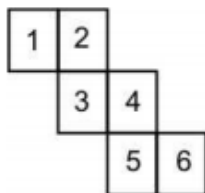
[c] – (i)

Q13. Identify the nets which can be used to make cubes.







Sol. Only (a) makes the cube.

Q14. Can this be a net for a die? Explain your answer?







Sol. No, because one pair of opposite face will have 1 and 4 on them whose total is not 7, and another pair of opposite faces will have 3 and 6 on them whose total is also not 7.

Q15. Match these two dimensional figures with their names.

(i) 	(a) Triangle
(ii) 	(b) Rectangle
(iii) 	(c) Trapezium
(iv) 	(d) Cylinder

Sol. (i) – (b), (ii) – (d), (iii) – (a), (iv) – (c)

Q16. Here are the shadows of some 3-D objects, when seen under the lamp of an overhead projector. Identify the solids (s) that match each shadow. (There may be multiple answer for these!)

			
A circle (i)	A square (ii)	A triangle (iii)	A rectangle (iv)

Sol. The given shadows can be obtained in case of the following objects.

- Compact disk
- A dice
- Triangular pyramid
- Note Book

Q17. Examine if the following are true statements:

- (i) The cube can cast a shadow in the shape of a rectangle.
- (ii) The cube can cast a shadow in the shape of a hexagon.

Sol. A cube can cast shadow only in the shape of a square. Therefore, any other shapes are not possible.

Q18. When we cut a corner of a cube as shown in the figure 12.19, we get the cutout piece as:

- a. Square pyramid
- b. Trapezium prism
- c. Triangular pyramid
- d. A triangle



Fig. 12.19

Sol. C

Q19. State whether the figure 12.6 shows rotational symmetry. If yes, then what is the order of rotational symmetry?



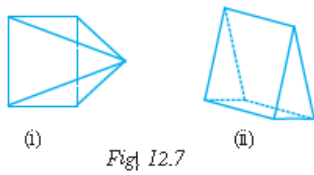
Fig. 12.6

Sol. The given figure shows rotational symmetry. The order of symmetry = 4, which is clear from the following figure:



The dot is placed just to identify different positions of the figure.

Q20. Identify the following figures:



Sol.

- (i) Rectangular Pyramid
- (ii) Triangular Prism