Mensuration Test

Instruction: In the following questions, select the correct choice among the alternatives given below the question.

1. **A beam 9 m long, 40 cm, wide and 20 cm high is made up of iron. Which weight's 50 kg per cubic metre. The weight of the beam is:**
   (a) 56 kg   (b) 48 kg   (c) 36 kg   (d) 27 kg

2. **The length of the longest rod that can be placed in room 30 m long, 24 m broad and 18 m high , is:**
   (a) 30 m   (b) $15\sqrt{2\,m}$ (c) $30\sqrt{2}$ m   (d) 60 m

3. **The maximum length of a rod, that can be kept in a rectangular box of dimension 8 cm × 6 cm × 2 cm is:**
   (a) $2\sqrt{13}$ cm   (b) $2\sqrt{14}$ cm   (c) $2\sqrt{26}$ cm   (d) $10\sqrt{2}$ cm

4. **A rectangular block 6 cm by 12 cm by 15 cm is cut up into exact number of equal cubes. The least possible number of equal cubes. The least possible number of cubes will be:**
   (a) 6   (b) 11   (c) 33   (d) 40

5. **Three cubes of iron whose edge are 6 cm, 8 cm and 10 cm respectively are melted and formed into a single cube. The edge of new cube formed is:**
   (a) 12 cm   (b) 14 cm   (c) 16 cm   (d) 18 cm

6. **The volume of a cube is 2744 cm³ . its surface area is:**
   (a) 196 cm²   (b) 1176 cm²   (c) 784 cm²   (d) 588 cm²

7. **A metal sheet 27 cm long, 8 cm broad and 1 cm thick is melted into a cube. The difference between surface areas of two solids is:**
   (a) 284 cm²   (b) 286 cm²   (c) 296 cm²   (d) 300 cm²

8. **If the areas of three adjacent faces of a cuboid are *x, y, z* respectively, then the volume of the cuboid is:**
   (a) xyz (b) $2xyz$ (c) $\sqrt{xyz}$ (d) $\sqrt[3]{xyz}$

9. **If *S* be surface area and *V* be the volume of a cuboid of dimensions *abc* then $\frac{1}{V}$ is equal to:**
   (a) $\frac{S}{2}(a+b+c)$ (b) $\frac{2}{S}\left(\frac{1}{a}+\frac{1}{b}+\frac{1}{c}\right)$

(c) $\dfrac{2S}{a+b+c}$ (d) 2S $(a + b + c)$

10. If the areas of three adjacent faces of a rectangular block are in the ratio of 2: 3: 4 and its volume is 9000 cm³; then the length of the shortest side is:

(a) 10 cm   (b) 15 cm   (d) 20 cm   (d) 30 cm

11. The percentage increase in the surface area of a cube when each side is doubled is:

(a) 25%   (b) 50 %   (c) 150%   (d) 300%

12. The curved surface area of a right circular cylinder of base radius r is obtained by multiplying its volume by:

(a) $\dfrac{2}{r^2}$ (b) $2r^2$ (c) $\dfrac{2}{r}$ (d) $2r$

13. A copper sphere of radius 3 cm is beaten and drawn into a wire of diameter 0.2 cm, the length of wire is:

(a) 9 m   (b) 12 m   (c) 18 m   (d) 36 m

14. A cylindrical vessels 60 cm in diameter is partially filled with water. A sphere 30 cm in diameter is dropped into it. The increase in the level of water in the vessel is:

(a) 2 cm   (b) 3 cm   (c) 4 cm   (d) 5 cm

15. Two equal volumes circular cylinders have their heights in the ratio 2:1. The ratio of their radii is:

(a) 2: 1   (b) 1: 2   (c) $\sqrt{2}$: 1   (d) 1: $\sqrt{2}$

16. Find the ratio of the volumes of a cylinder, a c one and a sphere if each has the same diameter and same height:

(a) 1: 3: 2   (b) 2: 3: 1   (c) 3: 1: 2   (d) 3: 2: 1

17. The radius of a sphere is R and the radius of the base as well as the height of cylinder is R, the ratio of their volume is:

(a) 4: 3   (b) 3: 4   (c) 2: 3

       (d) 3:2

18. Three spherical metal balls of radii 6 cm, 8 cm and R cm are melted into a solid sphere of radius 12 cm, the value of R is:

(a) 8 cm   (b) 10 cm   (c) 14 cm   (d) 18 cm

19. A cone and sphere have equal radii and volumes. The ratio of the diameter of sphere to the height of the cone is:

(a) 3:1   (b) 1: 3   (c) 6: 1

(d) 1:2

20. A hemisphere of lead of radius 6 cm is cast into a right circular cone of heights 75 cm. the radius of the base of the cone is:

(a) 1.4 cm   (b) 2 cm   (c) 2.4 cm   (d) 4.2 cm

Answers to the above questions

Questions no.	Answers
1.	(c)
2.	(c)
3.	(c)
4.	(d)
5.	(a)
6.	(b)
7.	(b)
8.	(c)
9.	(b)
10.	(b)
11.	(d)
12.	(c)
13.	(d)
14.	(d)
15.	(d)
16.	(c)
17.	(a)
18.	(b)
19.	(d)
20.	(c)