SATISH CHANDRA MEMORIAL SCHOOL

CLASS TEST **FM : 18**

SURFACE AREA AND VOLUME

1. Volume of a hemisphere is 19404 cubic cm. The total surface area is 1

(a) 2772 sq. cm (b) 4158 sq. cm (c) 5544 sq. cm (d) 1386 sq. cm

2. The diameters of two cones are equal. If their slant heights are in the ratio 5 : 4, then the ratio of their curved surface areas is 1

(a) 4: 5 (b) 25 : 16 (c) 16:25 (d) 5 : 4

Choose the correct answer out of the following choices. 2×1

(a) Both A and R are true and R is the correct explanation of A.

(b) Both A and R are true but R is not the correct explanation of A.

(c) A is true but R is false.

(d) A is false but R is true.

3. **Assertion (A):** If the radius of a sphere is tripled, then the ratio of the volume of the original sphere to that of the new is 1 : 27.

Reason (R): Volume of a sphere with radius r is $\frac{4}{3}\pi r^3$.

4. **Assertion:** If diameter of a sphere is decreased by 25% then its curved surface area is decreased by 43.75%.

Reason: Curved surface area is increased when diameter decreases.

5. A solid sphere of radius 3 cm is melted and then recast into small spherical balls each of diameter 0.6 cm. Find the number of small balls thus obtained. 2

6. The diameters of two cones are equal. If their slant heights are in the ratio 7:4, find the ratio of their curved surface area. 2

7. A hemispherical dome of a building needs to be painted. If the circumference of the base of the dome is 17.6 m, find the cost of painting it, given the cost of painting is ₹ 5 per 100 cm^2. 3

8. A corn cob, shaped somewhat like a cone, has the radius of its broadest end as 2.1 cm and length (height) as 20 cm. If each 1 cm^2 of the surface of the cob carries an average of four grains, find how many grains you would find on the entire cob. 3

9. Aditya was doing an experiment to find the radius r of a ball. For this he took a cylindrical container with radius r = 7 cm and height 10 cm. He filled the container almost half by water as shown in the figure-1. Now he dropped the ball into the container as in figure-2.

He observed that in figure-2, the water level in the container raised from P to Q i.e., to 3.4 cm.

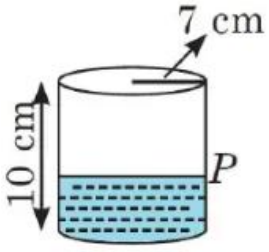

Figure - 1

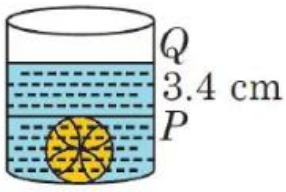

Figure - 2

Read the above passage and answer the questions

(a) What is the approximate radius of the ball? 2

(b) What is the volume of the cylinder? 1

(c) What is the volume of the spherical ball? 1