

**BCM SCHOOL, BASANT AVENUE, DUGRI, LUDHIANA.**

**OCTOBER ASSIGNMENT(2025-26)**

**CLASS- IX (MATHEMATICS)**

**TOPIC: SURFACE AREA AND VOLUMES AND QUADRILATERALS**

**SECTION –A (MULTIPLE CHOICE QUESTIONS)**

1.	If the ratio of the volumes of two spheres is 1:8, then the ratio of their surface areas is (a) 1:2 (b) 1:4 (c) 1:8 (d) 1:16
2.	In a parallelogram ABCD, if $\angle DAB = 75^\circ$ and $\angle DBC = 60^\circ$ , then $\angle BDC =$ (a) $45^\circ$ (b) $55^\circ$ (c) $60^\circ$ (d) $65^\circ$
3.	Assertion (A) : In a parallelogram, the bisectors of any two consecutive angles intersect at right angle.  Reason (R) : The diagonals of a parallelogram are equal if and only if it is a rectangle.  (a) Both Assertion (A) and Reason (R) are the true and Reason (R) is a correct explanation of Assertion (A).  (b) Both Assertion (A) and Reason (R) are the true but Reason (R) is not the correct explanation of Assertion (A).  (c) Assertion (A) is true but Reason (R) is false.  (d) Assertion (A) is false and Reason (R) is true.

**SECTION – B( 2 MARKS QUESTIONS)**

4.	Bisectors of two adjacent angles A and B of quadrilateral ABCD intersect at a point O. Prove that $2\angle AOB = \angle C + \angle D$
5.	The curved surface area of a conical vessel is 10 times it's slant height. Find the diameter of the vessel.

**SECTION – C (3 MARKS QUESTIONS)**

6.	The radius and height of a cone are in the ratio 3 : 4 and it's volume is $301.44 \text{ cm}^3$ . Find the radius and slant height of the cone.
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7.	D, E and F are the mid points of the sides BC, CA and AB , respectively of an equilateral $\triangle ABC$ . Show that $\triangle DEF$ is also an equilateral triangle.
SECTION – D (5 MARKS QUESTIONS)	
8.	<p>ABCD is a parallelogram and E is the mid point of AD. A line through D, drawn parallel to EB, meets AB produced at F and BC at L. Prove that</p> <p>(i) <math>AF = 2 DC</math></p> <p>(ii) <math>DF = 2 DL</math></p>
9.	Two solid spheres made of same metal have masses 5920 g and 740 g, respectively. Determine the radius of the larger sphere, if the diameter of the smaller sphere is 5 cm.
SECTION – E(4 MARK QUESTIONS)	
10.	<p>Mathematics teacher of a school took his 10<sup>th</sup> standard students to show Taj Mahal. It was a part of Their Educational trip. The teacher had interest in history as well. He narrated the facts of Taj Mahal To the students. Then the teacher said in this monument one can find combination of solid figures. There are 4 pillars which are cylindrical in shape. Also, 2 domes at the back side which are Hemispherical. 1 big domes at the centre. It is the finest example of the symmetry. (Use <math>\pi = 22/7</math>)</p> <p>(i) How much cloth material will be required to cover 2 small domes each of radius 4.2 metres?</p> <p>(ii) Write the formula to find the volume of one pillar (including hemispherical. dome)</p> <p>(iii) Find the volume of the hemispherical dome at the centre if base radius is 7 m.</p> <p>(iv) What is the lateral surface area of all 4 pillars if height of the each pillar is 14 m and base radius is 1.4 m (without dome) ?</p>