Set 1

INDIAN SCHOOL SOHAR
FORMATIVE ASSESSMENT - 4
MATHEMATICS

Class: X **Marks : 20**

Date : **Time : 40 min**

General Instructions:

All questions are compulsory. Section A comprises 3 questions of 1 mark each, Section B comprises 2 questions of 2 marks each, Section C comprises 3 questions of 3 marks each and Section D comprises 1 question of 4 marks.

SECTION A

1. Find the total surface area of a hemisphere of radius 7cm.
2. Write the perimeter of a quadrant of a circle of radius **r.**
3. The diameters of the ends of a frustum of a cone of height h are 2R and 2r. Find the volume of the frustum of the cone.

SECTION B

4. The radius and slant height of a right circular cone are in the ratio of 7 : 13 and its curved surface area is 286 cm^2. Find its radius. (Use $л = \frac{22}{7}$)
5. The length of the minute hand of a clock is 7cm. Find the area swept by the minute hand from 6.00 pm to 6.10 pm

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Set 2

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MATHEMATICS

Class: X **Marks : 20**

Date : **Time : 40 min**

General Instructions:

All questions are compulsory. Section A comprises 3 questions of 1 mark each, Section B comprises 2 questions of 2 marks each, Section C comprises 3 questions of 3 marks each and Section D comprises 1 question of 4 marks.

SECTION A

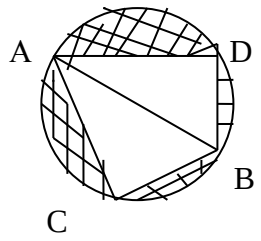
1. The diameters of the ends of a frustum of a cone of height h are 2R and 2r. Find the total surface area of the frustum of the cone.
2. Write the area of a quadrant of a circle of radius **r.**
3. Find the lateral surface area of a hemisphere of radius 7cm.

SECTION B

4. The volume of right circular cylinder of height 7 cm is 567л . Find its curved surface area. (Use $л = \frac{22}{7}$)
5. The length of the minute hand of a clock is 7cm. Find the area swept by the minute hand from 6.00 pm to 6.20 pm

SECTION C

6. Find the area of the shaded region in the figure, if BC = BD = 8 cm, AC = AD = 15 cm and O is the centre of the circle. (Take л = 3.14)



7. Right circular cylinder having diameter 12 cm and height 15 cm is full of ice-cream.The ice-cream is to be filled in cones of height 12 cm and diameter 6 cm having a hemispherical shape on the top. Find the number of such cones which can be filled with ice-cream.
8. A tower is 60 m high. From the top of it the angles of depression of the top and the bottom of a tree are found be 30° and 60° respectively. Find the height of the tree and its distance from the tower.

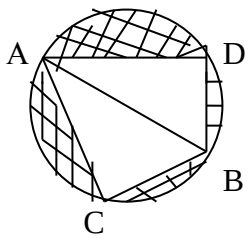
SECTION D

9. An aeroplane flying horizontally 1 km above the ground is observed at an elevation of 60°. After A flight of 10 seconds, its angle of elevation is observed to be 30° from the same point on the ground. Find the speed of the aeroplane in km/hour.

☺ ******THE END******☺

SECTION C

6. Find the area of the shaded region in the figure, if BC = BD = 8 cm, AC = AD = 15 cm and O is the centre of the circle. (Take л = 3.14)



7. A hemispherical bowl of internal diameter 36 cm is full of liquid. This liquid is to be filled in cylindrical bottles of radius 3 cm and height 6 cm. How many such bottles are required to empty the bowl ?
8. A man standing on the top of a multi-storey building, which is 30 m high, observes the angle of elevation of the top of a tower as 60° and the angle of depression of the base of the tower as 30°. Find the horizontal distance between the building and the tower. Also, find the height of the tower.

SECTION D

9. An aircraft is flying at a constant height with a speed of 360 km/hour. From a point on the ground, The angle of elevation at an instant was observed to be 45°. After 20 seconds, the angle of elevation was observed to be 30°. Determine the height at which the aircraft was flying.
   (Use $\sqrt{3}$ = 1.732)

☺ ******THE END******☺