**Maths Term 2 Test**

**Time 120 Min**

**General Instructions:**

1. The question paper consists of 14 questions divided into 3 sections A, B, and C.

2. All questions are compulsory.

3. Section A comprises of 6 questions of 2 marks each. Internal choice has been provided in two questions.

4. Section B comprises of 4 questions of 3 marks each. Internal choice has been provided in one question.

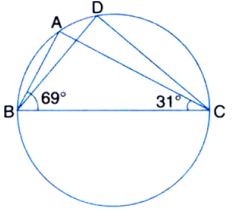
5. Section C comprises of 4 questions of 4 marks each. Internal choice has been provided in one question.

**Section A.**

1. The hollow sphere, in which the circus motorcyclist performs his stunts, has a diameter of 7m. Find the area available to the motorcyclist for riding.
2. Prove that if chords of congruent circles subtend equal angles at their centres, then the chords are equal.

OR

In fig, ∠ABC= 690, ∠ ACB=310. Find ∠BDC.



1. Construct an equilateral triangle, given its side and justify the construction.
2. Find the values of k for each of the following quadratic equations, so that they have two equal roots. --- kx (x – 2) + 6 = 0
3. Ramkali saved ₹ 5 in the first week of a year and then increased her weekly savings by ₹ 1.75. If in the nth week, her weekly savings become ₹ 20.75, find n.
4. Two players, Sangeeta and Reshma, play a tennis match. It is known that the probability of Sangeeta winning the match is 0.62. What is the probability of Reshma winning the match?

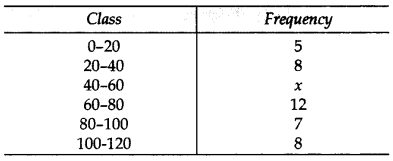
**Section B**

1. Four friends Rahul, Arun, Ajay, and Vijay went for a picnic at a hill station. They decided to make a conical tent at a park. They were carrying 200 m2 cloth with them. They made the conical tent with a height of 8 m and a diameter of 12 m. The remaining cloth was used for floor.

a) Find the volume of air in the tent?

b) Find the cloth left for the floor after making the tent? From the following frequency distribution, find the median class:

1. The mean of the following frequency distribution is 62.8. Find the missing frequency x.



1. If the 8th term of an A. P. is 31 and the 15th term is 16 more than the 11th term, find the AP.

OR

The fourth term of an AP is 0(zero). Proof that 25th term of save AP is triple of its 11th term.

1. The diagonal of a rectangular field is 60 metres more than the shorter side. If the longer side is 30 metres more than the shorter side, find the sides of the field.

OR

The sum of the areas of two squares is 468 m2. If the difference of their perimeters is 24 m, find the sides of the two squares.

**Section C**

1. A triangle ABC is drawn to circumscribe a circle of radius 4 cm such that the segments BD and DC into which BC is divided by the point of contact D are of lengths 8 cm and 6 cm respectively . Find the sides AB and AC.

OR

Let ABC be a right triangle in which AB = 6 cm, BC = 8 cm and Ð B = 90°. BD is the perpendicular from B on AC. The circle through B, C, D is drawn. Construct the tangents from A to this circle.

1. In a game of chance there is spinning of an arrow which comes to rest pointing at one of the numbers 1, 2, 3, 4, 5, 6, 7, 8 and there are equally likely outcomes. What is the probability that it will point at :

(i) 7? (ii) an odd number? (iii) a number less than 9?

OR

A bag contains 5 red, 4 blue and 3 green balls. A ball is taken out of the bag at random. Find the probability that the selected ball is (i) of red colour (ii) not of green colour.

1. A container shaped like a right circular cylinder having diameter 12 cm and height 15 cm is full of ice cream. The ice cream is to be filled into 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.

OR

A vessel is in the form of an inverted cone. Its height is 8 cm and the radius of its top, which is open, is 5 cm. It is filled with water up to the brim. When lead shots, each of which is a sphere of radius 0.5 cm are dropped into the vessel, one-fourth of the water flows out. Find the number of lead shots dropped in the vessel.

1. A tower stands by the side of a river at P. On the other side of the river, Q is a point on the bank such that PQ is the width of the river. R is the point on the bank of Q such that P, Q and R are in the same straight line. If QR = 5 metre and angles of elevation of top of the tower from Q area R are 60° and 45° respectively, find the width of the river and the height of the tower**.**

OR

A house, 15 metres high, stands on one side of a park and from a point on the roof of the house, the angle of depression of the foot of a chimney is 30° and the angle of elevation of the top of the chimney from the foot of the house is 60°. What is the height of the chimney? What is the distance between the house and the chimney?