Sample paper 5
Class IX
Subject: Mathematics

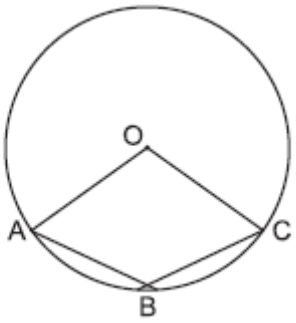
Time : 1hr **M.M 40**

General Instructions:

1. All questions are compulsory.
2. The paper consists of 17 questions divided into 4 section A, B , C and D . Section A comprises of 6 questions of 1mark each. Section B comprises of 2 questions of each 2 marks. Section C comprises of 6 questions of 3 marks each. Section D comprises of 3 questions of 4 marks each.
3. There is no over all choice in this question paper. Although internal choices have been provided in the same question.

Section A (6 marks)

1. In the figure,O is the centre of circle if $\angle AOC = 130º$. Find $\angle ABC$.
   (i) 100°
   (ii) 10°
   (iii) 50°
   (iv) 45°



2. Decimal representation of a rational number cannot be
   (a) non terminating
   (b) terminating
   (c) non terminating repeating
   (d) non terminating non repeating

3. Abscissa of all the points on the y-axis is
   (a) 1
   (b) any number
   (c) 0
   (d) 2

4. Evaluate $(-12)^3 + (7)^3 + (5)^3$
   (a) -1260
   (b) 1550
   (c) 1750
   (d) 0

5. A cubic polynomial has.

   (a) Two zeros
   (b) One zero
   (c) Three zeros
   (d) At least three zeroes.

6. There is one and only one circle passing through _____ non-collinear points

   (i) 1
   (ii) 2
   (iii) 3
   (iv) 4

Section B (4 marks)

7. Show that a median of a triangle divides it into two triangles of equal areas..
   .
8. Factorize : $a^7 - ab^6$

   .

Section C (18 marks)

9. If $x = \sqrt{5} - \sqrt{2}$ and $y = \sqrt{5} + \sqrt{2}$ Find the value of $x^2 - y^2$.
10. If x +1 is a factor of $ax^3 + x^2 – 2x + 4a - 9$, find the value of a.?
11. If two intersecting chords of a circle make equal angles with the diameter passing through their point of intersection, prove that the chords are equal..

12. Amit has a piece of land which is in the shape of rhombus. He wants to divide it equally in two equal parts one for his son and other for his daughter. If the perimeter of the land is 400m and one of its diagonal is 160m. Find how much area each of them will get?.

13. The taxi fare in a city is as follows. For the first kilometer, the fare is Rs 8, for the subsequent distance it is Rs 5 per km. taking the distance covered as x km and total fare as Rs y, write a linear equation for this information and draw its graph.

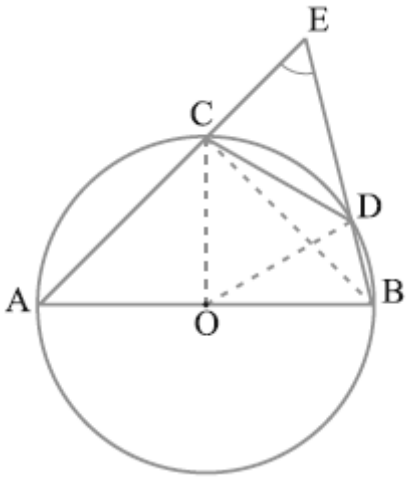
14.
   (i) Factorize $x^3 + 6x^2 + 11x + 6$
   (ii) Factorize $64m^3 - 343n^3$

Section D (12 marks)

15. Give the geometric representation of 5y + 3 = 0
    i) in one variable ii) in two variable

16. In Fig. below, AB is a diameter of the circle, CD is a chord equal to the radius of the circle. AC and BD when extended intersect at a point E. Prove that

    ∠AEB = 60°.



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17. XY is a line parallel to side BC of a triangle ABC. If BE || AC and CF || AB meet XY at E and F respectively, show that
    ar (ABE) = ar (ACF)