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HALF YEARLY EXAMINATION (2026 – 27)
MATHEMATICS
CLASS - IX

(19)

Time Allotted : 3 hours
[Printed pages:4]

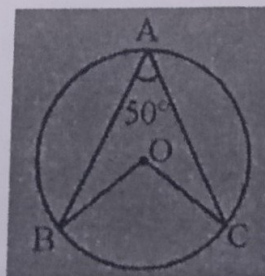
Maximum Marks : 80
Date:15.09.2026

General Instructions:

1. This question paper contains 38 questions. All questions are compulsory.
2. This question paper is divided into 5 sections A, B, C, D and E.
3. In Section A, Question number 1 to 18 are multiple choice questions (MCQs) and Question number 19 and 20 are Assertion - Reason based questions of 01 mark each.
4. In Section B, Question numbers 21 to 25 are very short answer (VSA) type questions, carrying 02 marks each.
5. In Section C, Question numbers 26 to 31 are short answer (SA) type questions, carrying 03 marks each.
6. In Section D, Question numbers 32 to 35 are long answer (LA) type questions, carrying 05 marks each.
7. In Section E, Question numbers 36 to 38 are case study based questions carrying 4 marks each with sub parts of value 1, 1, and 2 marks each respectively.
8. There is no overall choice. However, an internal choice in two questions of Section B, two questions of Section C, and two questions of Section D has been provided.
9. Draw neat and clean figures wherever required. Take $\pi = 22/7$ wherever required if not stated.
10. Use of calculators is not allowed.

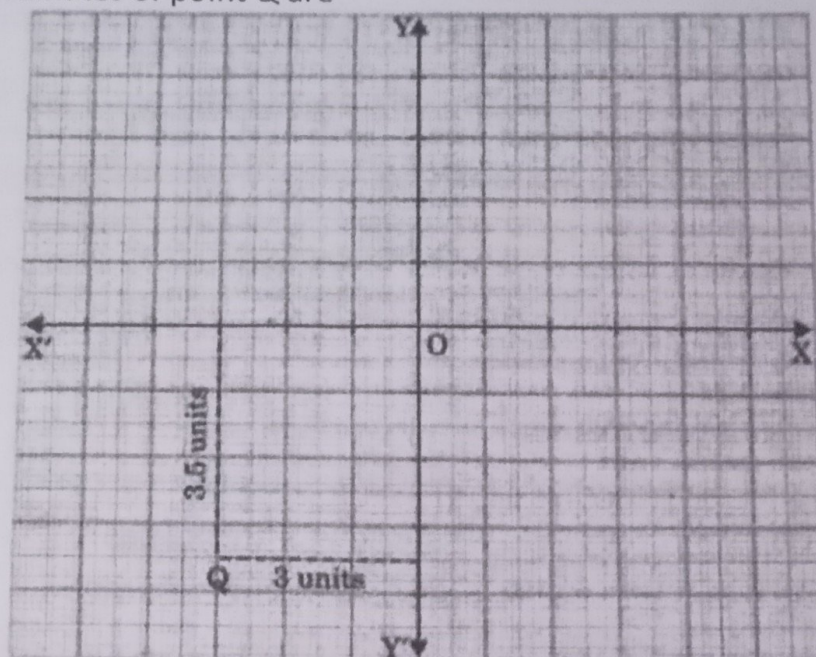
Section - A (Multiple Choice Questions)

- Q1. Which term of the given sequence; 3, 6, 12, is 768?
a) 10 b) 8 c) 9 ☒ d) None of these
- Q2. The probability of an event that is certain to happen is -
a) $\frac{1}{2}$ b) 0 ☒ c) 1 d) Not defined
- Q3. Area of an equilateral triangle of side 'a' is
☒ a) $\frac{\sqrt{3}a^2}{4}$ b) $\frac{a\sqrt{3}}{2}$ c) $\sqrt{3}a^2$ d) $a\sqrt{3}$
- Q4. The least possible radius of a circle passing through two points A and B is
a) Equal to AB b) twice of AB ☒ c) half of AB d) none of these
- Q5. In the given figure, O is the centre of the circle. If measure of $\angle BAC = 50^\circ$, then the measure of $\angle BOC$ is



- a) 120° ☒ b) 100° c) 80° d) 70°

- Q6. $(82)^2 - (18)^2 = ?$
 a) 8218 b) 6418 ☒ c) 6400 d) 7204
- Q7. If $a - b = 7$, and $ab = 9$, then $a^2 + b^2 = ?$
 a) 31 b) 67 ☒ c) 40 d) 58
- Q8. Which of the following number is an irrational number?
☒ a) $\sqrt{23}$ b) 0.3796 c) $\sqrt{225}$ d) $7.\overline{478}$
- Q9. The coefficient of x^2 in the polynomial $7 + 4x - x^2 + x^3$ is
☒ a) -1 b) 1 c) 7 d) 4
- Q10. The value of polynomial $6a^2 + 7a - 3$ when $a = 1$ is
☒ a) 10 b) 4 c) -13 d) -4
- Q11. The line of intersection of 4th and 1st quadrants is
 a) X-axis ☒ b) Y-axis c) Vertical axis d) None of these
- Q12. The co-ordinates of point Q are



- a) (3, 3.5) b) (3.5, 3) c) (-3, 3.5) ☒ d) (-3, -3.5)
- Q13. Expanded form of $(b - 7)^2$ is
 a) $b^2 + 14b + 49$ b) $b^2 + 14b + 14$ ☒ c) $b^2 - 14b + 49$ d) None of these
- Q14. The perimeter of a triangular plot is 16 m. If the measure of its two sides are 5m and 6m respectively, then its third side is
 a) 2m b) 3m ☒ c) 5m d) 4m
- Q15. If a parallelogram and a triangle are on the same base and between the same Parallels then
☒ a) Area of triangle = $\frac{1}{2}$ Area of parallelogram
 b) Area of triangle = Area of parallelogram
 c) Area of triangle = $\frac{1}{3}$ Area of parallelogram
 d) Area of triangle = $\frac{1}{4}$ Area of parallelogram

- a) a ~~b) b~~ c) $a - b$ d) $a + b$

Assertion (A) is false, but reason (R) is true.

- Reason (R) : The distance of (a, b) from origin is $\sqrt{a^2 + b^2}$

- Reason (R) : A number having non – terminating non – recurring decimal expansion is an irrational number.

0-2

- OR

a) A b) L

- $$\frac{5}{6} \times \left(\frac{5}{8} \times \frac{3}{5} \right)$$

Section - C (3 Marks each)

- ~~Q29.~~ Prove that the line joining the centre of the circle and the midpoint of a chord of the circle is perpendicular to the chord.

OR

(Maths9-3)

- Q30. Find the perimeter of a sector of a circle of radius 14 cm and sector angle 75° .
 Q31. What is the sum of all the 2 digit numbers divisible by 3.

Section - D (5 Marks each)

- Q32. Consider the relationship between temperature measured in degrees Celsius ($^\circ\text{C}$) and degrees Fahrenheit ($^\circ\text{F}$), which is given by $^\circ\text{C} = a^\circ\text{F} + b$. Find a and b , given that ice melts at 0°C and 32°F , and water boils at 100°C and 212°F .
 Q33. Convert the decimals into the form $\frac{p}{q}$
 a) 0.012 b) $1.\overline{235}$
 Q34. Draw a $\triangle ABC$ with $AB = 5$ cm, $\angle A = 100^\circ$ and $AC = 4$ cm. Draw the circumcircle of $\triangle ABC$. Is the centre inside or outside the triangle?
 Q35. The sides of a triangular plot are in the ratio 3 : 5 : 7. It's perimeter is 300 m. Find its area.

OR

The parallel side of a trapezium are 40 cm and 20 cm. If its non – parallel Sides are both equal, each being 26 cm, find the area of the trapezium.

Section - E (Case Study)

- Q36. A playground is in the shape of a square. The area of the square PQRS is 256 m^2 with each side $(x + 2)$ m. One day Suraj along with his two friends Ajay and Aman went to play there with bicycle. Someone stole Suraj bicycle, but Ajay and Aman helped him by contributing $(4a + 60)$ and $(6a + 10)$ respectively, to buy a new bicycle. The cost of bicycle was Rupees 4200.
 a) Find the side of square shaped ground, when $x = 14$. (1)
 b) What is the value of 'a'? (2)
 c) What will be the amount given by Ajay to Suraj for the above value of 'a'? (1)
 Q37. Romi and Ria were playing cards. They have to draw one card at a time from a well shuffled deck of 52 cards. First Ria draws a card and then Romi did.
 a) What is the probability of drawing a king by Ria? (1)
 b) Find the probability that Romi draws a red card. (1)
 c) What would be the probability of drawing a joker? Give reason to support your answer. (2)
 Q38. In a classroom, four friends Arun, Vicky, Manu, and Vikas were causing disturbance during class. To maintain discipline and create a better learning environment, the class teacher decided to rearrange their seating arrangement. According to the new arrangement Aryan, Vicky, Manu and Vikas are seated at the points A (3, 4), B(8, 9), C(11, 6) and D(6, 1) respectively.
 a) Find the difference between the ordinates of points B and D. (1)
 b) What will be the sum of abscissa of points A, B, C and D? (1)
 c) Find the area of rectangle ABCD. (2)

(Maths9-4)