

# SUMMATIVE ASSESSMENT - I, 2015-16 MATHEMATICS

## Class - IX

Time Allowed: 3 hours

Maximum Marks: 90

### General Instructions:

1. All questions are compulsory.
2. The question paper consists of 31 questions divided into four sections A, B, C and D. Section-A comprises of 4 questions of 1 mark each; Section-B comprises of 6 questions of 2 marks each; Section-C comprises of 10 questions of 3 marks each and Section-D comprises of 11 questions of 4 marks each.
3. There is no overall choice in this question paper.
4. Use of calculator is not permitted.

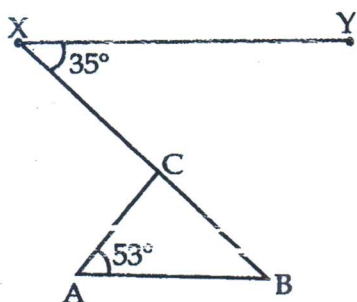
### SECTION-A

Question numbers 1 to 4 carry one mark each.

1 Simplify :  $(-3 + \sqrt{5})(-3 - \sqrt{5})$  1

2 If  $2x + 1$  is one factor of the polynomial  $2x^2 - x - 1$ , then find the other factor. 1

3 In the figure,  $AB \parallel XY$ ,  $\angle YXC = 35^\circ$  and  $\angle BAC = 53^\circ$ , then find  $\angle ACB$ . 1



4 In which quadrant/axis does the point (0,4) lies ? 1

### SECTION-B

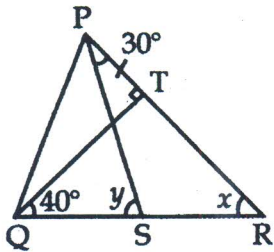
Question numbers 5 to 10 carry two marks each.

5 Find two rational numbers between 4 and 5. 2

6 Factorise :  $3 - 12(a - b)^2$  2

7 In the given figure,  $QT \perp PR$ ,  $\angle TQR = 40^\circ$  and  $\angle SPR = 30^\circ$ . Find  $x$  and  $y$ . 2

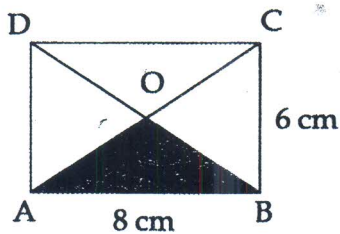
*Handwritten mark*



- 8 In the given figure, if point C lies between A and B, then prove that  $AB > AC$ . Which Euclid's axiom is applied by you? 2



- 9 Write reflections of the point (1, 2) in  $x$ -axis and  $y$ -axis. 2
- 10 In the given figure, ABCD is rectangle in which  $AB = 8$  cm,  $BC = 6$  cm and the diagonals intersect each other at O. Find the area of the shaded region by using Heron's formula. 2



### SECTION-C

Question numbers 11 to 20 carry three marks each.

- 11 Represent  $\sqrt{9.3}$  on the number line. 3
- 12 Prove that  $\frac{2^{30} + 2^{29} + 2^{28}}{2^{31} + 2^{30} - 2^{29}} = \frac{7}{10}$ . 3
- 13 If  $x$  and  $y$  are two positive real numbers such that  $x^2 + 4y^2 = 40$  and  $xy = 6$ , then find the value of  $x + 2y$ . 3
- 14 Find the value of  $\frac{85^3 + 15^3}{85^2 + 15^2 - 85 \times 15}$ , using a suitable identity. 3
- 15 In a triangle ABC, X and Y are the points on AB and BC respectively. If  $BX = \frac{1}{2}AB$  and  $BY = \frac{1}{2}BC$  and  $AB = BC$ . Show that  $BX = BY$ . 3
- 16 In the figure, the side QR of  $\Delta PQR$  is produced to a point S. If the bisectors of  $\angle PQR$  and  $\angle PRS$  meet at a point T, then prove that  $\angle QTR = \frac{1}{2} \angle QPR$ . 3

