

**Bhavan's Tripura Vidyamandir**2<sup>nd</sup> Periodic Assessment: (2024-2025)**Class:- 9**

Time:- 2 Hours

**Subject:- Mathematics**

Total :- 50 Marks

Name of the student:

Roll:

Section:

**INSTRUCTION**

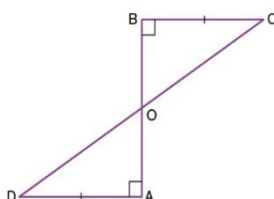
- 1) This question paper contains five sections A, B, C, D and E.
- 2) Section A has 10 multiple choice based questions of 01 mark each.
- 3) Section B has 05 very short answer type questions of 02 marks each.
- 4) Section C has 04 short answer type questions of 03 marks each.
- 5) Section D has 02 long answer type questions of 05 marks each.
- 6) Section E has 2 case based studies with sub parts of values of 1, 1 and 2 marks each respectively.

**SECTION: A**

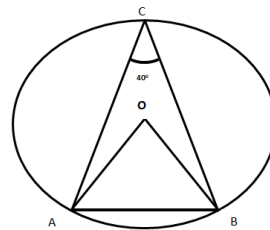
1. Which of the following is an irrational number?  
a)  $\frac{3}{4}$                                       b)  $\frac{2}{3}$                                       c)  $\sqrt{3}$                                       d)  $\frac{1}{2}$
2. What is the degree of the polynomial  $3x^2 + 2x - 1$ ?  
a) 1                                      b) 2                                      c) 3                                      d) 4
3. Which of the following is a postulate?  
a) Things equal to the same thing are equal to each other  
b) Things that coincide with one another are equal to one another  
c) The whole is greater than the part  
d) A straight line may be drawn from any point to any point
4. Which of the following is true for similar triangles?  
a) Equal areas                                      b) Equal perimeters  
c) Equal corresponding angles                                      d) All of the above
5. What is the sum of the interior angles of a quadrilateral?  
a)  $180^\circ$                                       b)  $270^\circ$                                       c)  $360^\circ$                                       d)  $90^\circ$
6. A chord is at a distance of 8 cm from the Centre of a circle of radius 17 cm. the length of the chord is  
a) 25 cm                                      b) 12.5 cm                                      c) 30 cm                                      d) 9 cm
7. The value of  $2x^2 + 3x - 5$  at  $x=0$  is  
a) 5                                      b) -5                                      c) 0                                      d) 10
8. If a ray stands on a line, then the sum of the two adjacent angles is  
a)  $90^\circ$                                       b)  $360^\circ$                                       c)  $180^\circ$                                       d)  $270^\circ$
9. An equilateral  $\triangle ABC$  is inscribed in a circle with centre O. the measure of  $\angle BOC$  is  
a)  $30^\circ$                                       b)  $60^\circ$                                       c)  $90^\circ$                                       d)  $120^\circ$
10. The class mark of the class interval 100-110 is  
a) 105                                      b) 210                                      c) 10                                      d) 5

**SECTION: B**

11. Find the value of polynomial  $5x - 4x^2 + 3$  at  $x = 0$ .
12. Find four rational number between 3 and 4.
13. True or False:  
i) Only one line can pass through a single point.  
ii) A terminated line can be produced indefinitely on both sides.
14. AD and BC are equal perpendiculars to a line Segment AB. Show that  $\triangle AOD \cong \triangle BOC$ .

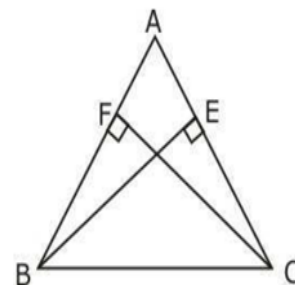


15. In the given figure,  $\angle ACB = 40^\circ$ . Find  $\angle AOB$ .



### SECTION: C

16. ABC is an isosceles triangle in which altitudes BE and CF are drawn to equal sides AC and AB respectively in the given figure. Show that these altitudes are equal.



17. Given below are the seats won by different political parties in the polling outcome of a state assembly elections:

Political party	A	B	C	D	E	F
Seats won	75	55	37	29	10	37

Draw a bar graph to represent the above data.

18. Rationalise:  $\frac{1}{\sqrt{3}+\sqrt{2}}$

19. Simplify each of the following expression:

i)  $(3 + \sqrt{3})(2 + \sqrt{2})$

ii)  $(\sqrt{5} - \sqrt{2})(\sqrt{5} + \sqrt{2})$

### SECTION: D

20. A circular park of radius 20m is situated in a colony. Three boys Ankur, Syed and David are sitting at equal distance on its boundary each having a toy telephone in his hands to talk each other. Find the length of the string of each phone.

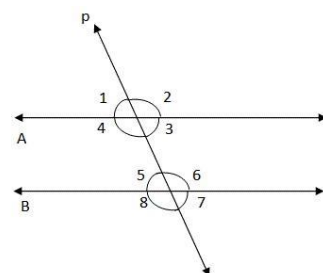
21. i) evaluate:  $103 \times 107$

ii) if  $x + y + z = 0$ , show that  $x^3 + y^3 + z^3 = 3xyz$

### SECTION: E

22. Reeta and Rohan were playing a game on parallel lines and the angles formed with the transverse line (i.e. alternate angles, corresponding angle and interior angles).

First Reeta drew a straight line AB, then Rohan drew another straight line  $CD \parallel AB$ . Further, a transverse line PQ was drawn which intersects lines AB and CD at points X and Y respectively.



i)  $\angle 2$  and  $\angle 3$  forms \_\_\_\_\_ pair.

ii)  $\angle 4$  and  $\angle 6$  are called \_\_\_\_\_

iii) If  $\angle 4 + \angle 5$  is less than 180, in which side AB and CD will meet.

23. Mr. Malhotra, a maths teacher entered in the class room and asked students whether they have revised the chapter circles. Students replied that they are ready for blackboard test. Mr. Malhotra drew a figure on blackboard and asked following questions.

i) what is the value of  $y$ ?

ii) what is the measure of  $\angle C$ ?

iii) Why  $\angle B = \angle C$ ?

