PERIODIC ASSESSMENT-III (2023-24)
MATHEMATICS (CODE-041)

CLASS: IX	**MAX. MARKS: 20**
DATE: 16/01/24	**TIME: 40 MINUTES**

General Instructions:

1. This Question paper contains - four sections A, B, C and D. Each section is compulsory. However, there are internal choices in some questions.
2. Section A has 4 MCQ's and 1 Assertion-Reason based questions of 1 mark each.
3. Section B has 2 Very Short Answer (VSA)-type questions of 2 mark each.
4. Section C has 2 Short Answer (SA)-type questions of 3 mark each.
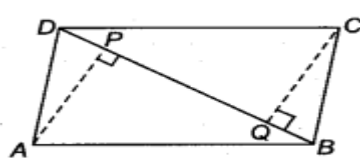5. Section D has 1 Long Answer (LA)-type questions of 5 marks.

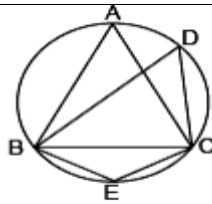<table>
<tr><td colspan="2" align="center">SECTION – A
(Multiple Choice Questions) Each question carries 1 mark</td></tr>
<tr><td>1.</td><td>If x – 1 is a factor of $2x^3 + x^2 - 4x + m$, then the value of m is
   (a) 0   (b) 1   (c) 2   (d) −1</td></tr>
<tr><td>2.</td><td>The value of the polynomial $3x + 2x^2 - 4$ at x=0 is
   (a) − 3   (b) 3   (c) − 4   (d) 4</td></tr>
<tr><td>3.</td><td>Given a circle of radius 5 cm and centre O. OM is drawn perpendicular to the chord XY.
If OM = 3 cm, then length of chord XY is
   (a) 4 cm   (b) 6 cm   (c) 8 cm   (d) 10 cm</td></tr>
<tr><td>4.</td><td>The two diagonals are equal in a
   (a) rhombus   (b) trapezium   (c) parallelogram   (d) rectangle</td></tr>
<tr><td>5.</td><td>Assertion: The angles of a quadrilateral are x°, (x – 10) °, (x + 30) ° and (2x) °, the smallest angle is equal to 58°.
Reason: Sum of the angles of a quadrilateral is 360°.
Directions: Choose the correct answer out of the following choices:
(a)Both Assertion (A) and Reason(R) are true and Reason(R) is the correct explanation of the Assertion(A).
(b)Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the Assertion (A).
(c)Assertion (A) is true, but Reason (R) is false.
(d)Assertion (A) is false, but Reason (R) is true.</td></tr>
<tr><td colspan="2" align="center">SECTION – B
[This section comprises of very short answer type questions (VSA) of 2 marks each]</td></tr>
<tr><td>6.</td><td>ABCD is a parallelogram and AP and CQ are perpendiculars from vertices A and C on diagonal BD. Show that

(i) ΔAPB ≅ ΔCQD   (ii)AP=CQ.</td></tr>
<tr><td>7.</td><td>Prove that equal chords subtend equal angles at the center.
<div align="center">OR</div>In the given figure, ΔABC is equilateral. Find ∠BDC and ∠BEC</td></tr>
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[This section comprises of short answer type questions (SA) of 3 marks each]

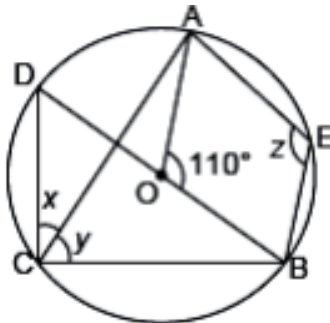| 8.	In a parallelogram ABCD, E and F are the mid-points of sides AB and CD respectively. Show that the line segments AF and EC trisect the diagonal BD.
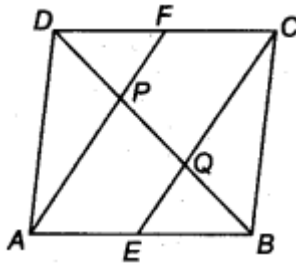
OR

ABCD is a trapezium in which AB || CD and AD = BC. Show that
(i)∠A=∠B
(ii)∠C=∠D

9.	In the given figure, O is the center of the circle and ∠AOB = 110°, find the value of x, y and z.

SECTION – D
[This section comprises of long answer type questions (LA) of 5 marks]

10.	The polynomial $p(x) = x^4 - 2x^3 + 3x^2 - ax + 3a - 7$ when divided by $x + 1$, leaves the remainder 19. Find the value of a. Also, find the remainder when $p(x)$ is divided by $x + 2$.

****************THE END ******************