

BCM SCHOOL, BASANT AVENUE, DUGRI, LUDHIANA.
APRIL ASSIGNMENT(2025-26)
CLASS- IX (MATHEMATICS)
TOPIC: NUMBER SYSTEM, POLYNOMIALS

SECTION –A (MULTIPLE CHOICE QUESTIONS)

1.	<p>An expression is given : $2(\sqrt{k}-1)+\sqrt{8}$</p> <p>If on adding $-8\sqrt{2}$ to the expression results in a rational number, what is the value of k?</p> <p>(a) 12</p> <p>(b) 18</p> <p>(c) 24</p> <p>(d) 36</p>
2.	<p>Consider the expression $x^{m-1}+3$; where m is a constant. What is the least integer value of m for which the given expression is a polynomial in one variable?</p> <p>(a) 0</p> <p>(b) 1</p> <p>(c) 2</p> <p>(d) 3</p>
3.	<p>Assertion (A) : The degree of the polynomial $(x^2-2)(x-3)(x+4)$ is 3.</p> <p>Reason (R) : A polynomial of degree 3 is called a cubic polynomial.</p> <p>(a) Both Assertion (A) and Reason (R) are the true and Reason (R) is a correct explanation of Assertion (A).</p> <p>(b) Both Assertion (A) and Reason (R) are the true but Reason (R) is not the correct explanation of Assertion (A).</p> <p>(c) Assertion (A) is true but Reason (R) is false.</p> <p>(d) Assertion (A) is false and Reason (R) is true.</p>

SECTION – B(2 MARKS QUESTIONS)

4.	Factorise: $a^2 + b^2 - 2ba + 2bc - 2ca$
5.	If $x - y = 5$ and $xy = 84$, find the value of $x^3 - y^3$.

SECTION – C (3 MARKS QUESTIONS)

6.	Factorise: $125x^3 + 27y^3 + 8z^3 - 90xyz$
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7.	If $x - 2$ and $x - \frac{1}{2}$ are the factors of $px^2 + 5x + r$, show that $p = r$.
SECTION – D (5 MARKS QUESTIONS)	
8.	If the polynomial $az^3 + 4z^2 + 3z - 4$ and $z^3 - 4z + a$ leave the same remainder when divided by $z - 3$, find the value of a .
9.	If $a = \frac{\sqrt{2}+1}{\sqrt{2}-1}$ and $b = \frac{\sqrt{2}-1}{\sqrt{2}+1}$ then find the value of $a^2 + b^2 - 4ab$.
SECTION – E(4 MARK QUESTIONS)	
10.	<p>Manik and Dhruv are bench-mates in the class. In the mathematics class, Manik was finding that it was difficult to simplify $\frac{1}{\sqrt{5}-\sqrt{2}}$.</p> <p>His bench-mate Dhruv gave him a clue to rationalise the denominator by taking the conjugate of $\sqrt{5}-\sqrt{2}$. Manik simplified the expression and thanked Dhruv for the help. Dhruv also gave him the approximate value $\sqrt{5} = 2.236$ and $\sqrt{2} = 1.414$ to find the value of the expression.</p> <p>Based on the above information answer the following questions:</p> <ol style="list-style-type: none"> What is the conjugate of $(\sqrt{5} - \sqrt{2})$? What is the simplified form of the expression that Manik found out? What is the approximate value of the expression did Manik find after putting the values of $\sqrt{5}$ and $\sqrt{2}$? Is $\sqrt{5} - \sqrt{2}$ a rational number?