Name:	**Std: IX**	**Date:**
Subject: Mathematics	**Roll No:**	
Topic: Polynomials		

Q.1 to Q. 5 are multiple choice questions. Select the most appropriate answer from the given options.

Q 1. Degree of the polynomial $7x^5+8x^2-5x+3$ is:

(a) 1 (b) 3

(c) 5 (d) 2

Q 2. Which of these identities is not true?

(a) $(x+y)^2=x^2+2xy+y^2$ (b) $(x-y)^2=x^2-2xy+y^2$

(c) $x^2-y^2=(x-y)(x+y)$ (d) $(x+y+z)^2=x^2+y^2+z^2+3xyz$

Q 3. The value of the polynomial $5x-4x^2+5$, when $x=-2$ is

a) –21 b) –26

c) 26 d) 21

Q 4. One of the zeroes of the polynomial $2x^2+7x-4$ is

(a) 2 (b) 0.5

(c) –1 (d) –2

Q 5. If $a+b+c=0$, then $a^3+b^3+c^3$ is equal to

a) 0 *b) abc*

c) 3*abc* d) 2*abc*

Q 6. Which of the following expressions are polynomials? Justify your answer.

(a) 10

(b) $\sqrt{5}y^2-2y$

(c) $5-\sqrt{8}z^2$

(d) $\dfrac{4}{x+6}$

Q 7. Write the coefficient of x^2 in each of the following

(a) $2x+5x^2-6$

(b) $6x-5$

(c) $(2x-5)(2x^2-3x+1)$

Q 8. Find the value of the polynomial $3x^3-4x^2+7x-10$ when $x = 3$ and also when $x = -3$.

Q 9. Find the zeroes of the polynomial $p(y)=(y-3)^2-(y+3)^2$.

Q 10. Determine the remainder when polynomial $p(x)=x^4-3x^2+2x-5$ is divided by $x-2$.

Q 11. Factorize following:

(a) $3x^3-x^2-3x+1$

(b) $1+8x^3$

(c) $x^2+9x+18$

(d) $a(a+b+c)-bc$

(e) a^4-81b^4

Q 12. Using identities, find the value of

(a) 101^2

(b) $(0.98)^2$

(c) $190\times190-10\times10$

(d) $(95)^3$

(e) $(1005)^3$

Q 13. Expand

(a) $(x+5y+6z)^2$

(b) $(2a-3b+4c)^2$

(c) $(5p-3q)^3$

Q 14. Find the value of $x^3+y^3+z^3-3xyz$ if $x^2+y^2+z^2=83$ and $x + y + z = 15$.

Q 15. Show that, $x + 3$ is a factor of $69 + 11x - x^2 + x^3$.

Q 16. If $x+2a$ is a factor of $a^5-4a^2x^3+2x+2a+3$, then find the value of a.

Q 17. By remainder theorem, find the remainder when $p(x)$ is divided by $g(x)$

(a) $p(x)= x^3-2x^2-4x-1,\ g(x)=x+1$

(b) $p(x) = x^3-6x^2+2x-4,\ g(x) = 1-\frac{3}{2}x$

ANSWER KEY

1. (c)
2. (d)
3. (a)
4. (b)
5. (c)
6. (a) Polynomial, because exponent of the variable of 10 or$10x^0$ is a whole number
   (b) Polynomial, because exponent of the variable is a whole number.
   (c) Not Polynomial, , because exponent of the variable is not a whole number
   (d) Not Polynomial, , because exponent of the variable is not a whole number
7. (a) (5) (b) (0) (c) (-16)
8. $(56, -148)$
9. $(2y)(-4)=0$
10. (3)
11. (a) $(3x-1)(x-1)(x+1)$ (b) $(2x+1)(4x^2-2x+1)$ (c) $(x+6)(x+3)$
    (d) $(a+b)(a-c)$ (e) $(a^2+9b^2)(a-3b)(a+3b)$
12. (a) 10201 (b) 0.9604 (c) 36000
    (d) 857375 (e) 1015075125
13. (a) $x^2+25y^2+36z^2+10xy+60yz+12xz$
    (b) $4a^2+9b^2+16c^2-12ab-24bc+16ac$
    (c) $125p^3-225p^2q+135pq^2-27q^3$
14. 180
15. Proving
16. (3/2)
17. (a) (0) (b) $\left(\frac{-136}{27}\right)$