SHIKSHA CLASSES

Sub : Maths | **Question Paper** | **Total Marks :** 30
Class : IX | 2 : Polynomial | **Time :** 1 Hour

Section A (Each 1 Marks)

Multiple choice Questions (MCQs).

Q.1 : Which of the following is quadratic polynomial

a) $x + 2$ b) $x^2 + 2$ c) $x^3 + 2$ d) $x^3 (2x + 2)$

Q.2 : If $x^{51} + 51$ is divided by $(x + 1)$ the remainder is :

a) 0 b) 1 c) 49 d) 50

Q.3 : If a polynomial f(x) is divided by x – a the remainder is

a) f(0) b) f(a) c) f(– a) d) f(a) – f((0)

Q.4 : Zero of the polynomial $p(x) = cx + d$ is :

a) – d b) – c c) $\frac{-d}{c}$ d) 0

Q.5 : Degree of the polynomial $p(x) = 4x^4 + 2x^2 + x^5 + 2x + 7$

a) 7 b) 4 c) 5 d) 3

Q.6 : If $3 + 5 – 8 = 0$, then the value of $(3)^3 + (5)^3 – (8)^3$ is

a) 260 b) –360 c) –160 d) 160

Q.7 : The value of $\frac{(361)^3 + (139)^3}{(361)^2 - 361 \times 139 + (139)^2}$ is.

a) 300 b) 500 c) 400 d) 600

Q.8 : If $x + 2$ is a factor of $x^3 – 2ax^2 + 16$, then value of a is

a) 3 b) 1 c) 4 d) 2

Q.9 : Identify the polynomial

a) $x^{-2} + x^{-1} + 5$ b) $x^2 + 5\sqrt{x} + 7$ c) $\frac{1}{x^3} + 7$ d) $3x^2 + 7$

For question number 10 to 11 two statement are given one labeled Assertion and other labeled Reason select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below

a) Assertion and Reason both are correct statements and Reason is the correct explanation of Assertion.

b) Assertion and Reason both are correct statements but Reason is not the correct explanation of Assertion.

c) Assertion is correct statement but Reason is wrong statement.

d) Assertion is wrong statement but Reason is correct statement.

Q.10 : **Assertion :** The degree of the polynomial $(x^2 - 2)(x - 3)(x + 4)$ is 3.

Reason : A polynomial of degree 3 is called a cubic polynomial.

Q.11 : **Assertion :** If $2x^2 - 32$ is the volume of a cuboid, then length of cuboid can be $x - 8$.

Reason : Volume of a cuboid = $l \times b \times h$.

Section B (Each 2 Marks)

Q.12 : Factorize $125x^3 + 27y^3$

Q.13 : Factorise $6x^2 + 17x + 5$ splitting the middle term.

OR

Factorize : $x^3 - 2x^2 - x + 2$.

Section C (Each 3 Marks)

Q.14 : If $x^2 + \frac{1}{x^2} = 51$, then find the value of $x - \frac{1}{x}$.

OR

If $3x + 2y = 8$ and $xy = 4$ then find the value of $9x^2 + 4y^2$.

Q.15 : If $x + \frac{1}{x} = 7$, then find the value of $x^3 + \frac{1}{x^3}$.

Section D

Q.16 : Simplify : $\frac{(a^2 - b^2)^3 + (b^2 - c^2)^3 + (c^2 - a^2)^3}{(a - b)^3 + (b - c)^3 + (c - a)^3}$ 5

OR

Factorize : $a^2 + b^2 - 2(ab - ac + bc)$

Section E

Q.17 : **Case study : (Any four)** **4**

A maths teacher explain the concept of polynomial. He told them about the types of polynomial as linear , quadratic cubic concept of degree of polynomial, remainder theorem and factor theorem based on the information solve the following questions.

i) Write how many variable are present in $4x^2 - 3x + 7$.

a) one b) two c) three d) zero

ii) $x - x^3$ is ..... type of polynomial.

a) linear b) quadratic c) cubic d) none of these

iii) The value of polynomial $q(y) = 3y^3 - 4y + \sqrt{11}$ at $y = 2$ is

a) $16 + \sqrt{11}$ b) $9 - \sqrt{11}$ c) $15 + \sqrt{11}$ d) 16

iv) $(104)^3 =$

a) 1124864 b) 1124684 c) 1214846 d) 1412648

v) Every linear polynomial in one variable has a .....zero.

a) unique b) no zero c) zero d) infinite

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