IX Test-5

1) Degree of the polynomial $p(x) = 4x^4 + 2x^3 + 2x + x^5 + 7$ is
(a) 7 (b) 4 (c) 5 (d) 3

2) Zero of the polynomial $p(x) = cx + d$ is
(a) $-d$ (b) $-c$ (c) $-\frac{d}{c}$ (d) -7

3) If $x^2 + kx + 6 = (x+2)(x+3)$, the value of k is
(a) 1 (b) 2 (c) 5 (d) 3

4) If $p(x) = 7 - 3x + 2x^2$, then value of $p(-2)$ is
(a) 12 (b) 31 (c) 21 (d) 22

5) Zero of the polynomial $p(x)$; where $p(x) = ax$; $a \neq 0$ is
(a) 1 (b) a (c) 0 (d) $\frac{1}{a}$

6) If $p(x) = 2 + \frac{x}{2} + x^2 - \frac{x^3}{3}$, then $p(-1)$ is
(a) $\frac{15}{6}$ (b) $\frac{17}{6}$ (c) $\frac{1}{6}$ (d) $\frac{13}{6}$

7) $(1+3x)^3$ is an example of
(a) monomial (b) binomial (c) Trinomial (d) none of these

8) The coefficient of x^2 in $(3x + x^3)\left(x + \frac{1}{x}\right)$ is
(a) 3 (b) 1 (c) 4 (d) 2

9) What is the remainder when $x^3 - 2x^2 + x + 1$ is divided by $(x-1)$?
(a) 0 (b) -1 (c) 1 (d) 2

10) Degree of which of the following polynomial is zero
(a) x (b) 15 (c) x^2 (d) $x + \frac{1}{x}$

11) Degree of zero polynomial is
(a) 0 (b) 1 (c) any no. (d) not defined

12) The degree of the polynomial $2 - y^2 - y^3 + 2y^7$ is
(a) 2 (b) 7 (c) 0 (d) 3

13) If a polynomial $f(x)$ is divided by $(x-a)$, then remainder is (a) $f(0)$ (b) $f(a)$ (c) $f(-a)$ (d) $f(a) - f(0)$

14) The coefficient of x^2 in $(2 - 3x^2)(x^2 - 5)$ is
(a) -17 (b) -10 (c) -3 (d) 17

15) In which of the following $(x+2)$ is a factor?

(a) $4x^3-13x+6$ (b) x^3-x^2+x+4 (c) $4x^3-13x-25$ (d) $-2x^3+x^2-13x-19$

16) The remainder when x^2+2x+1 is divided by $(x+1)$ is
(a) 4 (b) 0 (c) 1 (d) -2

17) Which of the following is a polynomial in x?
(a) $x+\frac{1}{x}$ (b) $x^2+\sqrt{x}$ (c) $x+\sqrt{2}x^2+1$ (d) $\sqrt{3x}+1$

18) The value of the polynomial x^2-x-1 at $x=-1$ is
(a) -3 (b) 1 (c) -1 (d) 0

19) Which of the following polynomial has -3 as a zero?
(a) $x-3$ (b) x^2-9 (c) x^2-3x (d) x^2+3

20) The remainder when $p(x)$ is divided by $(b-ax)$ is
(a) $p(-\frac{b}{a})$ (b) $p(\frac{a}{b})$ (c) $p(\frac{b}{a})$ (d) $p(-\frac{a}{b})$

21) If $x^{51}+51$ is divided by $(x+1)$, the remainder is
(a) 0 (b) 1 (c) 49 (d) 50

22) $(a+b)^2$ =

23) $(a-b)^2$ =

24) a^2-b^2 =

25) $(x+a)(x+b)$ =

26) a^2+b^2 =

27) $(a+b)^3$ =

(2) =

28) $(a-b)^3$ =

(2) =

29) a^3+b^3 =

(2) =

30) (a^3-b^3) =

(2) =

31) $(a+b+c)^2$ =

IX Test-5 (Answers)

1) 5 (c)

2) Put $p(x)=0$

$\Rightarrow cx+d=0$

$\Rightarrow cx=-d$

$\therefore x=\frac{-d}{c}$ (c)

3) $x^2+kx+6=(x+2)(x+3)$

$=x^2+5x+6$

$\therefore k=5$ (c)

4) $p(x)=7-3x+2x^2$

$p(-2)=7-3(-2)+2(-2)^2$

$=7+6+8=21$ (c)

5) Put $p(x)=0$

$\Rightarrow ax=0$

$x=0$ (c)

6) $P(x)=2+\frac{x}{2}+x^2-\frac{x^3}{3}$

$P(-1)=2+\frac{(-1)}{2}+(-1)^2-\frac{(-1)^3}{3}$

$=2-\frac{1}{2}+1+\frac{1}{3}=3-\frac{1}{2}+\frac{1}{3}$ (×6, ×3, ×2)

$=\frac{18-3+2}{6}=\frac{17}{6}$ (b)

7) $(1+3x)^3$ has four terms in its expansion.

none of these (d)

8) $(3x+x^3)\left(x+\frac{1}{x}\right)=3x^2+3x^1\times\frac{1}{x^1}+x^4+x^{3^2}\times\frac{1}{x^1}$

$=3x^2+3+x^4+x^2=4x^2+3+x^4$

Coefficient of x^2 is 4 (c)

9) remainder is $(1)^3-2(1)^2+1+1$

$=1-2+2=1$ (c)

10) 15 (b)

11) not defined (d)

12) 7 (b)

13) f(a) (b)

14) $(2-3x^2)(x^2-5) = 2x^2-10-3x^4+15x^2$
$= 17x^2-3x^4-10$

17 (d)

15) $4x^3-13x+6$ (a)
$4(-2)^3-13(-2)+6 = -32+26+6 = -32+32 = 0$ //

16) remainder is $(-1)^2+2(-1)+1 = 1-2+1 = 2-2 = 0$ (b)

17) $x+\sqrt{2}$ x^2+1 (c)

18) $(-1)^2-(-1)-1 = 1+1-1 = 2-1 = 1$ (b)

19) x^2-9 (b)
$(-3)^2-9 = 9-9 = 0$

20) Put $b-ax = 0$
$-ax = -b$
$x = \frac{b}{a}$

- remainder is $p(\frac{b}{a})$ (c)

21) remaindn is $(-1)^{51}+51 = -1+51 = 50$ (d)

22) $(a+b)^2 = a^2+b^2+2ab$

23) $(a-b)^2 = a^2+b^2-2ab$

24) $a^2-b^2 = (a+b)(a-b)$

25) $(x+a)(x+b) = x^2+(a+b)x+ab$

26) $a^2+b^2 = (a+b)^2-2ab$

27) $(a+b)^3 = a^3+b^3+3ab(a+b)$
$= a^3+3a^2b+3ab^2+b^3$

28) $(a-b)^3 = a^3-b^3-3ab(a-b)$
$= a^3-3a^2b+3ab^2-b^3$

29) $a^3+b^3 = (a+b)^3-3ab(a+b)$
$= (a+b)(a^2-ab+b^2)$

30) $(a^3-b^3) = (a-b)^3+3ab(a-b)$
$= (a-b)(a^2+ab+b^2)$

31) $(a+b+c)^2$
$= a^2+b^2+c^2+2ab+2bc+2ca$