Revision Test Date: 30/01/26

Topic: Polynomials, Linear eqn. in two variables

F.M. – 16 Time: 40 minutes

(A) Choose the correct option :– (1×3 = 3)

1) Which of the following is a solution of the equation $x + 2y = 7$?

(a) $x = 3, y = -5$
(b) $x = 3, y = 5$
(c) $x = 0, y = 7$
(d) $x = 3, y = 2$

2) The degree of the polynomial $3x^2(5x^3 - 4x + 7)$ is —

(a) 3
(b) 5
(c) 1
(d) 0

3) If $64x^2 - a = \left(8x + \frac{3}{4}\right)\left(8x - \frac{3}{4}\right)$, then the value of a is —

(a) $\frac{3}{2}$
(b) $-\frac{3}{4}$
(c) $\frac{9}{16}$
(d) $\frac{3}{4}$

(B) Assertion-Reason based questions :– (1×2 = 2)

1) Assertion (A) : 2 is a zero of the polynomial $p(x) = x^2 - 3x - 4$

Reason (R) : Putting $x = 2$ in $p(x)$, we get $p(2) = -6$

2) Assertion (A): A linear equation in two variables has infinitely many solutions.

Reason (R): A linear equation in two variables should have non-zero co-efficient for two variables.

(C) Short Answer Type questions : $3 \times 2 = 6$

(1) If $a+b+c=5$ and $ab+bc+ca=10$, then prove that $a^3+b^3+c^3-3abc=-25$ (3)

(2) If $x=(2p+1)$ and $y=(p-1)$ is a solution of the linear equation $2x-3y+5=0$, find the value of p.

Also check whether $(-4,-1)$ is a solution of the equation or not. (2+1)

(D) Long Answer Type Question : 5

(i) Show that,

$$x^{18}-y^{18}=(x+y)(x^2-xy+y^2)(x-y)(x^2+xy+y^2)\times (x^6-x^3y^3+y^6)(x^6+x^3y^3+y^6)$$

(ii) Prove that, $(x+1)$ is a factor of $(x^{99}+1)$. (3+2)