POLYNOMIALS

BASIC INTRODUCTION OF POLYNOMIALS

EXERCISE

1. For the polynomial $\frac{(x^3+2x+1)}{5}-\left(\frac{7}{2}\right)x^2-x^6$, write

(i) the degree of the polynomial

(ii) the coefficient of x^3

(iii) the coefficient of x^6

(iv) the constant term

2. Which of the following expressions are polynomials?

(i) $10 - 13x$

(ii) $z + z^2 + z^5 - 7$

(iii) $1+\frac{1}{a}+\frac{1}{a^2}+\frac{1}{a^3}+\frac{1}{a^4}$

(iv) $\frac{(m^2+m-2)}{(m-3)}$

(v) $\frac{1}{2}-\frac{5}{(4+u)}$

(vi) $1 + 5m$

(vii) $1 + 5u + 4u^2$

(viii) $\frac{1}{\sqrt{x}+5}$

ANSWER KEY

1. Given polynomial is:

$$\frac{\left(x^3+2x+1\right)}{5}-\left(\frac{7}{2}\right)x^2-x^6 \text{ or } \left(\frac{1}{5}\right)x^3+\left(\frac{2}{5}\right)x+\left(\frac{1}{5}\right)-\left(\frac{7}{2}\right)x^2-x^6$$

(i) Degree of the polynomial = 6 {since the highest power of variable x is 6}

(ii) Coefficient of $x^3 = \left(\frac{1}{5}\right)$

(iii) Coefficient of $x^6 = -1$

(iv) Constant term = $\left(\frac{1}{5}\right)$

2. (i) polynomial

(ii) polynomial

(iii) not polynomial

(iv) not polynomial

(v) not polynomial

(vi) polynomial

(vii) polynomial

(viii) not polynomial