Question Bank

1. Choose the correct answer.

a. How many terms are there in the polynomial $3x^4 - 2x^2 + 15$?

i. 1 ii. 2 iii. 3 iv. 4

b. The degree of the polynomial $3x^4 - 2x^2 + 15$ is:

i. 1 ii. 2 iii. 3 iv. 4

c. The constant term in the polynomial $3x^4 - 2x^2 + 15$ is:

i. $3x^2$ ii. $-2x^2$ iii. 15 iv. 0

d. $3ab$ multiplied by $2a$ gives:

i. $3a^2b$ ii. $5a^2b$ iii. $6ab$ iv. $6a^2b$

e. $18a^2b$ divided by $6ab$ gives:

i. $3b$ ii. $3a$ iii. $3ab$ iv. 3

2. Answer the following.

a. State whether each of the following is a polynomial or not:

i. $ax^2 - bx + c$ ii. $\frac{a}{x^2} - bx + c$

iii. $axy - bx + c$ iv. $a\sqrt{x} - bx + c$

b. Arrange the following polynomial in (a) ascending order of the first variable (b) ascending order of the second variable: $20xy^3 - 15x^3y + 3x^2y^2 - 2$

c. Add:

i. $3x - 5x^3 + 10x^2 + 12$ and $4x^4 - 2x^2 + 7x^3 - 2$

ii. $15x^2y - 20xy^2 + 4xy + 10x^2y^2 + 6$ and $25x^2y^2 + 8x^2y - 10xy^2 + 5$

iii. $5p^3 - q^2$ and $1 - p^2$

d. Subtract:

i. $(9x^3 - 7x^2 + 10x + 11) - (10x^3 - 10x^2 + 15)$

ii. $-12pq + 2p^2q - 6pq^2$ from $10p^2q + 5pq^2 - 2pq + 14$

iii. $5 - 2x$ from $3x^3 + 6x^2$

e. Multiply:

i. $3xy$ by $-2x^2y$

ii. $-2x^2 + 3x - 1$ by $2x - 1$

iii. $x^2 - y^2$ by $x + y$

f. Divide:

i. $12x^2 - 6x + 3$ by $6x + 2$

ii. $10y^3 - 5y + 5$ by $y - 1$

iii. $4x^4 - 2x^2 + x$ by $2x^2 - x$

g. Show that:

i. $3x + 1$ is a factor of $6x^3 - 3x + 2x^2 - 1$

ii. $x + 1$ is a factor of $4x^3 + 2x^2 - x + 1$

h. Find k if $2x + 1$ is a factor of $6x^2 - x + k$

i. Find the dividend from the details given:

i. Divisor $= x + 3$; Quotient $= 2x + 1$; Remainder $= -2$

ii. Divisor $= x - 1$; Quotient $= x^2 + 1$; Remainder $= 5$

iii. Divisor $= 3x - 2$; Quotient $= 2x^2 + x + 1$; Remainder $= 1$