Chapter 14

Factorisation

METHODS OF FACTORISATION OF AN ALGEBRAIC EXPRESSION:

Methods of factorisation of an algebraic expression are as follows:

(i) Factorisation by taking out a common factor.

(ii) Factorisation by regrouping terms.

(iii) Factorisation by using identities.

(iv) Factorisation of the form $x^2+(a+b)x+ab$.

FACTORISATION BY TAKING OUT A COMMON FACTOR:

CASE-I:

When each term of the given expression contains a common monomial factor. In this case we take out the common multiplier and use the distributive property.

Example: Factorise the binomial $6x^3y^2+12x^2y$ by taking out common factors.

PROCEDURE:

(i) Find the H.C.F. of the monomial terms of the given expression?

The H.C.F. of $6x^3y^2$ and $12x^2y$ is $6x^2y$.

(ii) Divide each term of the given expression by the H.C.F. to get a quotient?

$$\frac{6x^3y^2}{6x^2y}+\frac{12x^2y}{6x^2y}=xy+2$$

(iii) Write the given expression as a product of the H.C.F. and the quotient obtained on division?

Therefore, the factor of $6x^3y^2+12x^2y$ are $6x^2y$ and $(xy+2)$.

The factorisation of $6x^3y^2+12x^2y$ is written as $6x^2y(xy+2)$.