# Chapter 3

## **A**LGEBRA

#### IMPORTANT POINTS

#### **VARIABLE AND CONSTANT:**

- + A variable takes different values which is represented by x, y, z, ...
- + Constant has numerical values such as 31, -7,  $\frac{3}{10}$  etc.
- + Algebraic statements are also known as algebraic expressions.

#### **TERMS AND COEFFICIENTS**

→ Variables and constants are combined by the operations addition and subtraction to construct an algebraic expression.

Eg: In the algebraic expression 6x + 1

6x and 1 are terms

The term 6x is variable term and the term 1 is the constant term.

In the term 6x, 6 and x are factors

- A term may be
  - (i) a constant such as  $8, -11, 7, \dots$
  - (ii) a variable such as p, y, x, ...
  - (iii) a product of two or more variables such as xy, pq, abc, ...
  - (iv) a product of constant and a variable/variables such as 5x, -7pq, 3abc,

#### **POLYNOMIALS**

→ An algebraic expression with one term is called a monomial.

- An expression with two terms is called a **binomial** Eg: 2x + 3y.
- ★ An expression with three terms is a trinomial.

Eg: 
$$2x + 3y + 4z$$
.

- → An expression with one or more terms is called a **Polynomial** i.e. All the above expressions are polynomials.
- → A term of an algebraic expression is a product of factors.
- **+** Each factor or product of factors is called the **co-efficient** of the remaining product of factors.

Eg: In the term 5xy, 5 is the co-efficient of the remaining factor product xy. Similarly x is the co-efficient of 5y.

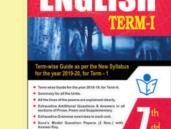
- **†** The constant 5 is called the **numerical co-efficient.**
- + A co-efficient can either be a numerical factor or an algebraic factor or product of both.
- → If no numerical co-efficient appears in the term, then the co-efficient is understood to be 1.

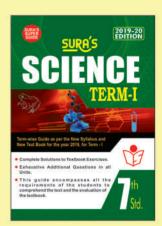
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