Chapter: 15
PROBABILITY

(a)PROBABILITY: - *The theory of probabilities and the theory of errors now constitute a formidable body of great mathematical interest and of great practical importance.*

$$\text{P(E)} = \frac{\textit{Number of trials in which the event happened}}{\textit{Total number of trials}}$$

$$\text{P(E)} = \frac{\textit{Number of outcomes favourable to E}}{\textit{Number of all possible outcomes of the experiment}}$$

(b) The probability of an event E is a number P(E) such that

$$0 \leq P(E) \leq 1$$

(c) The probability of a sure event (or certain event) is 1.

(d) The probability of an impossible event is 0.

(e) For any event E, P (E) + P ($\bar{E}$) = 1, where ($\bar{E}$) stands for 'not E'. E and ($\bar{E}$) are called complementary events.

(f) An event having only one outcome is called an elementary event. The sum of the probabilities of all the elementary events of an experiment is 1.