Classification of Propositions in Modern Logic —

Ans:— In Modern Logic, propositions mainly are of three kinds —

A. Simple propositions

B. Compound propositions and

C. General propositions.

All of these three types of propositions are further sub-divided into different types.

A. Simple proposition: Simple proposition is a proposition that consists of only one statement. For ex; it is raining tod. Simple propositions are classified into four types:

① subjectless proposition
② subject - predicate proposition
③ Relational proposition and
④ class - membership proposition

① Subjectless proposition: In this type proposition there is no subject of statement proposition there is no subject

Though the proposition makes a definite and meaningful statement. Subjectless proposition are of two types—

(a) Exclamatory proposition — e.g. Snake! Snake!

(b) Impersonal proposition — e.g. It rains.

(ii) Subject - Predicate form : In the subject-predicate form of proposition, a statement is made about an individual as possessing some attribute. For example,

(a) Socrates was wise, (b) This ball is red.

(iii) Relational proposition : When in a proposition a relation is indicated between two or more terms, it is called a 'Relational proposition'. For example, (a) The mother loves her children (b) Ram hates shyam

(iv) class-membership proposition —

The proposition which expresses that an individual or an object is a member of a class is called a class-membership proposition.

For example,

① Rabindranath was a poet.

(B). Compound Proposition : The proposition which contains more than one statement as component statements is called a 'Compound proposition'. For example, Ram is an intelligent and bright student.

In the modern Symbolic Logic we find the following four kinds of Compound propositions:

① Conjunctive proposition

⑪ Implicative

⑱ Disjunctive proposition and Alternative propo-sition

⑭ Negative Proposition

① Conjunctive proposition : Conjunctive proposition is a kind of compound proposition in which two or more simple propositions are combined by 'but', 'and', 'yet', 'though', 'd' 'although', 'however', 'morever' etc. In a Conjunctive proposition, there may be

more than two conjuncts. For example, Ram is honest and Sita is beautiful is compound proposition will be symbolized as p.q

(ii) Implicative proposition : When two propositions are combined by 'if' or 'only if' etc. to form a compound proposition, that compound proposition is called 'implicative proposition'. For example, If it rains, then the crops will be good.

The symbolic form of an implicative proposition is $p \supset q$.

(iii) Disjunctive proposition and Alternative proposition —

(a) A Disjunctive proposition is a compound proposition in which the component propositions are combined together by 'either..or' in the inclusive sense. For example, either he is a philosopher or a mathematician. The symbolic form of a Disjunctive proposition is $p \lor q$.

(b) An alternative proposition is a compound proposition, in which also the component propositions are combined by 'either ... or' in the exclusive sense. For example, either he is literate or he is illiterate. In an alternative proposition, both the disjuncts can not be true at the same time.

(iv) Negative proposition — It is a proposition in which the word 'no' or 'not' is added to the main proposition. A negative proposition is a Truth-Functional compound proposition, because its truth-value depends on the truth-value of the original proposition.

(c) General Proposition — General propositions are the propositions about classes. There are three distinct forms of General proposition. These are —
i) Existential General proposition.
ii) One-predicate General proposition.
iii) General propositions asserting relation between two classes.

5

i) **Existential General proposition** — An Existential General proposition is one which directly affirms or denies the existence of something. For example, Man exists.

ii) **One-predicate General proposition** — It is a kind of General proposition which either affirms or denies a property or an attribute about the whole universe. For example, All things undergo changes.

iii) **General propositions asserting relation between classes:** This kind of General propositions states that one class is wholly or partially included in or excluded from another class. Most General propositions are of this kind. For example —

a) All Indians are Asians. (Total Inclusion).

b) No soldiers are Cowards. (Total Exclusion).

c) Some philosophers are mathematicians. (Partial Inclusion)

d) Some philosophers are not scientists. (Partial Exclusion).