UNIT – 4

CONTENTS OF UNIT 4:

- Replacement **basics** - why and when to replace assets
- Replacement **with increasing maintenance cost** - value of money constant
- Replacement **with changing value of money** - using discounting
- Replacement **of items that fail suddenly** - individual and group policies
- Selecting **the best machine amongst two** - cost comparison and decision criteria

CLASS 13

INTRODUCTION:

The study of replacement is concerned with situations that arise when some items such as machines, replacement due to their deteriorating efficiency, failure or breakdown. The deteriorating efficiency or complete breakdown may be either gradual or all of sudden. For example, a machine becomes more and more expensive to maintain after a number of years or a railway time-table gradually becomes more and more out of date, an electric-light bulb fails all of a sudden, pipeline is blocked, or an employee loses his job, and so like. In all such situations, there is a need to formulate a most economic replacement policy for replacing faulty units or to take some remedial special action to restore the efficiency of deteriorating units. Following are the situations when the replacement of certain items needs to be done:

I. An old item has failed and does not work at all, or the old item is expected to fail shortly.

II. The old item has deteriorated and works badly or requires expensive maintenance.

III. A better design of equipment has been developed. Replacement problems can be broadly classified into the following two categories:

(a) When the equipment/assets deteriorate with time and the value of money

(i) does not change with time.
(ii) changes with time.

(b) When the items/unit fail completely all of a sudden.