BIOTECHNOLOGY

INTRODUCTION

- The Technology that makes use of living processes or bio processes in manufacturing and service industries is known as **Biotechnology.**
- It may use **microbes/plants/animals or cell cultures/products** recovered from these organisms.
- The scientific art of using living organisms to make desired products.
- It deals with integral applications of **Microbiology, Biochemistry, Plant & Animal sciences , process engineering techniques in manufacturing and service industries.**
- **Karl Ereky**- Hungarian scientist (1917)- First coined the name.
- It is a combined term of biology and technology.

- Examples: It includes
  - ✓ Recombinant DNA technology
  - ✓ Gene cloning
  - ✓ Animal cloning
  - ✓ Human cloning
  - ✓ Tissue culture
  - ✓ Plant propagation
  - ✓ Fermentation etc.,

- Preparation of curd from milk is a fermentation effect by yeast is a simple biotechnology process.

HISTORY

Before 6000 BC	Alcohol & beer preparation using yeast
4000 BC	Using yeast-Bread preparation
1680	Antonvon Leeuwenhock- Microscope
1876	Louis pasteur-Beer by lack of fermentation
1890	Alcohol used first in vehicles as a fuel
1897	Edward-from yeast it produces enz-converts glucose to alcohol
1910	Sewage waste treatment where more microorganisms used
1928	Alexander Fleming invented penicillin
1953	Sangaur- Insulin protein
1972	Arbour, Smith and Nathan invented DNA nick enzymes
1975	Monoclonal antibodies producing Hybridoma
1979	Synthetic genes produced living cells by H.G Corona
1984	Monoclonal antibodies
1997	Ramaiah & Skinner-pollen transformation

2000	Anish Datta-improved strain of potato using r DNA techno.
2005	Daphne-introduced gene into mice
2006	Kiyono-developed cholera vaccine producing rice variety
2007	Marcus & Torres-developed microbial fuel cells
2008	Gomez Linn-developed HIV vaccine producing tomato.

SCOPE

- Basic aim is to improve the quality human life and at protecting him from dangerous diseases. Important scopes are:
  - To produce more food for the growing population using the available land.
  - To rise disease resistant high yielding varieties of crops.
  - To introduce harmless bio fertilizers instead of chemicals.
  - To introduce biocides in agriculture.
  - To produce pharmaceutical products to treat severe diseases.
  - To produce bio fuels for reducing the fellings of forest trees for fuel wood.
  - To make use of various microorganisms in food making & preservation.

- To minimize pollution hazards.
- To supply disease free planting materials for farms.
- To supply artificial & transgenic seeds for sowing.
- To treat humans genetic diseases by gene therapy.
- To produce more sensitive and potent diagnostic kits for diseases and DNA.