

SHRI GOVIND GURU UNIVERESITY,
GODHRA

B.Sc. Biotechnology Semester-1

BS23MN1BT1

Minor : BT 01 : INTRODUCTION OF BIOTECHNOLOGY

UNIT-1: UDERSTANDING BIOTECHNOLOGY:

- a. What is Biotechnology?
- b. Biotechnology-an interdisciplinary pursuit
- c. Biotechnology- a three-component central core
- d. Product safety
- e. Public perception of Biotechnology
- f. Biotechnology and developing world

UNIT-2: SCOPE OF BIOTECHNOLOGY-I:

- a. Recombinant DNA and genetic engineering
- b. Mammalian cell culture
- c. Plants and plant cell culture
- d. Bio-fuels
- e. Bio-catalysis
- f. Waste Water and Sewage treatment

UNIT-3: SCOPE OF BIOTECHNOLOGY-II:

- a. Fermentation
- b. Bio-fertilizer and Bio pesticides
- c. Biotechnology and GM Crops (BT Cotton, golden rice)
- d. Monoclonal antibodies
- e. Diagnostics in developing countries

REFERENCES:

1. Ratledge, C. & Kristiansen, B. (2006) *Basic Biotechnology*, Cambridge University Press.
2. Gupta, P. K. (2005) *Elements of Biotechnology*, Rastogi Publications.

BT 02: Biotechnology practical

1. Principle, working and uses of laboratory instruments: [Microscope, Incubator, pH meter, Centrifuge, Colony counter]
2. Principle, working and uses of various types of sterilizers: [Hot air oven, Steam sterilizer, Inspissator, Bacteriological filters]
3. General laboratory safety and instructions
4. Preparation and sterilization of glassware's and media, disposals of media and cultures
5. Introduction of Bacterial cell staining:
 - a. Simple staining: Negative Staining
 - b. Gram's staining method

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