

**B.N.BANDODKAR COLLEGE OF SCIENCE, THANE**

**S.Y. B.Sc ATKT EXAMINATION FEBRUARY 2011**

**BIOTECHNOLOGY Paper –I**

**Total Marks: 90**

**Duration: 3hrs.**

NB:

1. Illustrate your answers with suitable examples.
2. All Questions carry equal marks.

**SECTION I**

- Q 1. A. Define:** **3M**
- 1) Synchronous growth
  - 2) Generation time
  - 3) Monoclonal antibodies
- B. Answer the following (any 3)** **12M**
- 1) Write a note on types of Vaccines.
  - 2) Explain different phases of Growth curve.
  - 3) Write a note on applications of Monoclonal antibodies.
  - 4) Explain the principle behind Diauxic growth curve.
  - 5) Discuss direct and indirect methods of measurement of growth.
- Q 2. A. Give 2 Examples of** **3M**
1. Airborn diseases
  2. Air Samplers
  3. Chemicals used for air sanitation
- B. Answer the following (any 3)** **12M**
1. Explain in detail the presumptive test.
  2. Discuss the quantitative methods of air analysis.
  3. Write a note on biosafety in laboratory.
  4. Comment on the aquatic distribution of micro-organisms.
  5. Characteristics of potable water.
- Q 3. A. Explain:** **3M**
1. Importance of sparger
  2. Precursors
  3. Inoculums development

- B. Answer the following (any 3)** **12M**
1. Write a note on filter sterilization
  2. Explain different aeration and agitation system used in fermentor
  3. Give detail account of media sterilization
  4. Write a note on media composition
  5. Justify inoculation and production media may or may not be of same composition

## SECTION II

- Q 4. A. Answer in short:** **3M**
1. Define: Bacteriophage
  2. Give two examples of plant viruses
  3. Define: Lysogenic phage

- B. Answer the following (any 3)** **12M**
1. Write a note on structure of Insulin
  2. Discuss: structure of virus
  3. Give importance of following hormones: Human growth hormone  
Erythropoietin
  4. Write a note on life cycle of lambda phage
  5. How would you cultivate bacterial viruses

- Q 5. A. Define:** **3M**
1. Nitrification
  2. Rhizosphere
  3. Soil

- B. Answer the following (any 3)** **12M**
1. How would you determine BOD of a water sample.
  2. How would you set up a Winogradsky's column.
  3. Write a note on Symbiotic Nitrogen fixation
  4. Discuss in detail Carbon cycle.
  5. Explain in detail primary treatment of waste water.

- Q.6 A. Explain:** **3M**
1. Secondary screening
  2. Importance of Strain improvement
  3. Surface fermentation

- B. Answer the following on (any 3)** **12M**
1. Give short notes on: solid state fermentation
  2. Write a note on: continuous fermentation and its importance
  3. Discuss different methods used for preservation of culture
  4. Give detail account of primary screening with suitable examples
  5. explain importance of mutation in strain development