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B.Tech.(BT) (2011 Onwards) (Sem.-3) MICROBIOLOGY

Subject Code: BTBT-303 Paper ID: [A1151]

Time: 3 Hrs. Max. Marks: 60

INSTRUCTION TO CANDIDATES:

- SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- 2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
- 3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Answer briefly:

- a. What is the basic difference between yeasts and moulds?
- b. What are enveloped viruses?
- c. What are mycoplasma?
- d. What is the purpose of streaking?
- e. What is the difference between thermophiles and mesophiles?
- f. What is a genotype and a phenotype?
- g. What is the difference between batch and continuous fermentation?
- h. Name the symbiotic association of two microorganisms.
- i. Why is it important to study the growth curve of microorganisms?
- j. What is the difference between cryopreservation and lyophilization?



SECTION-B

- 2. Explain in detail about the spread plate, streak plate and pour plate techniques used for the enumeration of bacteria.
- 3. How does conjugation differ from transformation? Write about conjugation in bacteria.
- 4. Explain about the various phases of the growth curve and describe their relation to generation time.
- 5. Explain about the role of microorganisms in the treatment of the industrial effluents.
- 6. Describe briefly about the various strain improvement techniques.

SECTION-C

- 7. Draw a typical structure of bacteria and label the various parts. Differentiate between gram positive and gram negative bacteria.
- 8. What are the various physical requirements for the growth of microorganisms? Classify microorganisms on the basis of the requirements of temperature and pH and explain why these have to be controlled.
- 9. Compare batch, fed batch and continuous fermentations. Write about their advantages, disadvantages and applications.

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