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Total No. of Pages : 01

Total No. of Questions : 08

M.Tech.(Bio. Tech.) (Sem.-1)

**MICROBIAL BIOTECHNOLOGY**

Subject Code : MTBT-101

M.Code : 23001

Time : 3 Hrs.

Max. Marks : 100

**INSTRUCTIONS TO CANDIDATES :**

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWENTY marks.

- Q.1 Explain the role of various microbes in the field of agriculture and medicine. (20)
- Q.2 a) Describe the morphology, growth requirements and genetics of Penicillium. (10)
- b) What is bioprospecting? How strain improvement technique could be used to improve the efficiency of penicillin producing microbial strain? (10)
- Q.3 a) Describe the technique of lyophilization and cryopreservation for preserving microbial cultures. (10)
- b) Write a note on crowded plate technique and auxanography as screening methods. (10)
- Q.4 What are biofertilizers? Explain the role of various microbes in improving the fertility of the soil. (20)
- Q.5 a) Explain the role of Bacillus thuringensis as a microbial insecticide. (10)
- b) Write a note on probiotics. Also enlist various health benefits of probiotics. (10)
- Q.6 Explain the microbial production and industrial uses of amylases and proteases. (20)
- Q.7 Describe the various substrates and technologies employed for the commercial production of vitamin A and vitamin B12. (20)
- Q.8 a) Explain the role of microbes in the degradation of pollutants and other toxic compounds. (10)
- b) Write a note on biodegradable plastics. (10)

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**