

M. SC. (BIOTECHNOLOGY) PART II EXAMINATION, 2017**MICROBIAL BIOTECHNOLOGY****PAPER - 2/4 B**

Time : Four hours

Full Marks : 100

Answer **any six** questions

1. Compare the different methods of microbial culture preservation. What are the goals of Industrial Microbiology ? [12+4=16]
2. Why industrial enzyme productions from microbial sources are preferred over plant/animal sources ? Briefly describe the downstream processing of a secreted protease enzyme. Mention the different applications of the enzyme glucose oxidase. Schematically describe the isolation of bacterial strain producing urease enzyme. [4+6+2+4=16]
3. Describe in detail the industrial production of a alcohol by fermentation covering both upstream and the downstream processing. [16]
4. Penicillin is a idiolite – Explain. Schematically describe the industrial production of Penicillin. Describe the role of bacteria in bioremediation of mercury pollution. [4+6+6=16]
5. Why food gets spoiled ? How to control spoilage of food ? How *Lactobacillus* sp can be used as Probiotics ? What are fermented foods ? Give examples. What are the basic concepts involved in Aquaponics ? [(3+3)+2+4+4=16]
6. What types of a pollutants are found in waste water ? What BOD₅ signify ? Describe the role of activated sludge in waste water treatment. How solid waste is managed in big city ? [4+4+4+4=16]
7. Compare the working principles of the different reporter genes used in different biosensors. What are xenobiotic compounds ? Describe how *Pseudomonas* sp can utilize toluene as the sole source of carbon. [8+(2+6)=16]
8. Write short notes on any four of the following :
(i) Bioleaching of copper, (ii) IPR, GMP, GRASS, SCP, (iii) Food borne diseases, (iv) vinegar production, (v) Biogas production, (vi) strain improvement, (vii) Enzyme immobilization, (viii) Desirable properties of a fermentor. [4×4=16]

[Neatness carries 4 marks]
