

**M.Sc. (Part—II) Semester—IV (CBCS) Examination**

**MICROBIOLOGY (4 MCB 3)**

**(Microbial Technology)**

**Paper—XV**

Time : Three Hours]

[Maximum Marks : 80

**Note :—**(1) All questions are compulsory and carry equal marks.

(2) Draw diagrams wherever necessary.

1. Describe downstream processing in detail and discuss principle of downstream processing. 16

**OR**

Explain isolation and screening of microorganisms for industrial fermentation with suitable example. 16

2. Describe industrial fermentation of the following :  
(a) Gluconic acid production 8  
(b) Bioplastic PHB production. 8

**OR**

- (c) Dextran production 8  
(d) Bioplastic PHA production. 8  
3. (a) Describe enzyme amylase production. 8  
(b) Explain immobilization of glucose isomerase. 8

**OR**

- (c) Explain riboflavin production. 8  
(d) Describe bioreactors and give its applications in industry. 8  
4. Describe the production of bioethanol in detail. 16

**OR**

- (a) Explain biofuels 8  
(b) Describe production of biogas. 8  
5. Describe biomass production in detail. 16

**OR**

Explain preparation and application of bacterial biopesticide with suitable example. Describe its biocontrol mechanism. 16