

1058

B.A./B.Sc. (General) Sixth Semester

**Industrial Microbiology**

IMB-602: Immunebiotechnology, Tissue Culture and Government Regulations

Time allowed: 3 Hours

Max. Marks: 33

**NOTE:** Attempt five questions in all, including Question No. 1 which is compulsory and selecting one question from each Unit.

x-x-x

I. Answer the following briefly:-

- a) Live vaccines
- b) Immunogens
- c) Immunoprecipitation
- d) Culture
- e) Epitope

(5x1)

**UNIT – I**

- II. a) Discuss the types of immunity and the role played by them in human body.
- b) What are immunoglobulins? Discuss their distribution and functions. (2x3½)
- III. a) Write a note on the history and scope of immunology.
- b) What do you know about the physiology of immune response? (2x3½)

**UNIT – II**

- IV. a) What are monoclonal antibodies and how these are produced?
- b) Write in detail the types of vaccines you have studied along with suitable examples. (2x3½)
- V. a) How vaccines are produced commercially? Discuss.
- b) What is hybridoma technology and its applications? (2x3½)

**UNIT – III**

- VI. a) How will you culture animal cell at commercial level for production of products for human welfare.
- b) Which products are produced by genetically engineered plant cells? Discuss any two. (2x3½)

P.T.O.



(2)

- VII. a) What do you know about the cell growth systems?  
 b) Give an overview of the type of metabolites produced by genetically engineered animal cells. (2x3½)

**UNIT - IV**

- VIII. a) Discuss the role of international organizations in biotechnology.  
 b) What are the regulations for disposal of biohazardous materials? (2x3½)
- IX. a) Discuss the health hazards during microbial spoilage?  
 b) What do you know about the government programmes for biotechnology? (2x3½)

x-x-x