

2062

B.A./B.Sc. (General) Sixth Semester  
Industrial Microbiology (Elective) - I

IMB-602: Immuno-biotechnology, 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

1. Answer the following briefly:

- Immunoprecipitation
- Passive immunity
- Mycotoxins
- DNA vaccines
- Secretory Immunoglobulins

(1x5=5)

#### UNIT-I

2.a) What are the contributions of Robert Koch in the field of immunology? Discuss the scope of immunology in daily life.

b) Describe the basic structure of immunoglobulin. How IgM differs from IgG?

(3 ½ x2=7)

3.a) Discuss the types of immunity and the activation of immune responses

b) What is Ag-Ab reactions? What are the three stages of reaction between Ag and Ab?

(3 ½ x2=7)

#### UNIT-II

4.a) Explain the production process of vaccines?

b) Discuss the production of hybridoma cells and their applications.

(3 ½ x2=7)

5.a) How are monoclonal antibodies produced? What is the significance of the hybridoma cell line discovery?

b) Define vaccines? What are Recombinant DNA Vaccines and Sub-cellular vaccines? Give examples as well.

(3 ½ x2=7)

#### UNIT-III

6.a) What products can be produced from cultured animal cells? Discuss the Characteristics of animal cell culture,

b) Discuss the products produced by Genetically recombinant bacteria with examples.

(3 ½ x2=7)

7.a) What is in-plant tissue culture? Describe any two plant tissue culture methods.

b) What are the basic techniques of animal cell culture? What are the advantages of cell culture?

(3 ½ x2=7)

#### UNIT-IV

8.a) Discuss the government regulations of Recombinant DNA research in India.

b) Explain the hazards in the production of fungal products with suitable example. (3 ½ x2=7)

9.a) What are the regulations for disposal of biohazardous materials? Discuss.

b) Describe the role of international organizations in development of biotechnology.

(3 ½ x2=7)