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3 (Sem-5) BOT M1

2021

(Held in 2022)

BOTANY

(Major)

Paper : 5·1

(Microbiology and Immunology)

Full Marks : 60

Time : Three hours

The figures in the margin indicate full marks for the questions.

1. Fill in the blanks/Answer the following :
1×7=7
- (a) What is generation time ?
 - (b) The class of immunoglobulin responsible for allergic symptoms is _____.
 - (c) Name the Actinomycetes which is known to produce the largest number of antibiotics.

Contd.

(d) What is interferon ?

(e) Genetical change of bacteria by taking cell-free necked DNA is called _____

(f) What is acquired immunity ?

(g) Name the causal agent of KURU disease of human being.

2. Answer the following questions : $2 \times 4 = 8$

(a) What is germ theory of diseases ?

(b) Differentiate between Viroids and Virusoides.

(c) What is Chlamydiae ? Give one example.

(d) What are the chemical constituents present in the outer membrane of Gram-negative bacteria ?

3. Write on **any three** of the following :

$5 \times 3 = 15$

(a) Biological nitrogen fixation

(b) Actinomycetes

(c) Nature of viruses

(d) Prions

(e) Humoral immunity

4. Answer **any three** of the following questions :
 $10 \times 3 = 30$

(a) Discuss the modern trends of microbial taxonomy in the classification of microorganisms.

(b) Describe the lytic cycle of viruses with diagram.

(c) Discuss the process of genetic recombination in bacteria.

(d) Describe the structure of immunoglobulin with diagram.

(e) Discuss the modern concept of bacterial cell.

(f) Discuss the role of microorganisms in biogeochemical cycle.