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PG CBCS
M.Sc. Semester-IV Examination, 2019
BOTANY
PAPER: BOT-403
Special Paper II
(MICROBIOLOGY- Applied)

Full Marks: 40 **Time: 2 Hours**

Special Paper– II :

MICROBIOLOGY- Applied

1. Answer any five of the following: **2×5**

a. What does it mean by enzyme immobilization?

b. Write down the name of two bacteria able to leach copper.

c. Define Probiotic according to WHO (2002).

d. Write the role of activation induced cytidine deaminase in somatic hyper mutation?

e. Why *E. coli* is considered as an indicator of water pollution?

f. Define hapten and toxoid?

g. What does it mean by aerosols?

h. What is malolactic fermentation? Why is it performed?

2. Answer any two of the following: **5×2**

a. What should be the selection criteria to establish a bacterium as a probiotic?

b. Draw and discuss different parts of a bioreactor.

c. What are the different classes of immunoglobulins? Describe any one of them.

d. State the microbiological methods for the desuphurization of coal.

(Turn over)

3. Answer any of from the following: **10×2**

a. What is FASTA and BLAST? Briefly describe the role of lactic acid bacteria in dairy fermentation. Discuss the process of cheese production. 2+3+5

b. Write down different steps of sandwich ELISA. What does it mean by monoclonal antibody? How does it form? 3+2+5

c. What does it mean by cell mediated immunity? What way cellular immunity protects the body? What way humoral immunity can be generated in the body? Schematically represent the development of immunological memory. 2+2+3+3

d. Write short notes on the following: 2.5 × 4

i. Xenobiotics;

ii. Fermentation scale up;

iii. Biogas production; and

iv. Phytovolatization

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