

**M.Sc.**

**2015**

**4th Semester Examination**

**MICROBIOLOGY**

**PAPER—MCB-401**

*Full Marks : 40*

*Time : 2 Hours*

*The figures in the right-hand margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

*Illustrate the answers wherever necessary.*

**Answer all questions of the following.**

**(Group-A)**

**( Marks : 20 )**

**Answer any two questions**

1. (a) Define biodiversity. Name two biodiversity hotspot of India.  
(b) What do you mean by gene frequency and genotype frequency ?

*(Turn Over)*

(c) What is the frequency of heterozygous Aa in a random mating population in which frequency of all dominant allele is 0.19 ?

(d) Differ between commensalism and mutualism.

(1+1)+(1+1)+4+2

2. (a) Discuss the Universal model of energy flow. Why it is called Universal ?

(b) State the significance of two channel energy flow model.

(c) State the salient attributes of a population.

(d) What is DOM ?

(4+1)+2+2+1

3. (a) Define biotic community. Distinguish between major and minor community.

(b) What do you mean by genetic drift ?

(c) What is an ecotone ? Explain with example.

(d) Write a note on Agroecosystem.

(1+2)+2+3+2

( Group-B )

( Marks : 20 )

Answer any *two* questions

4. State the role of micro organisms in the treatment of sewage and compare it with domestic sewage treatment. Mention the ecological impact of raw sewage in receiving water.

Define with example acidophile and basophile.

(3+3)+2+2

5. Write notes on :

3+2+2+3

(a) Biosafety.

(b) MPN.

(c) Advantages and disadvantages of Bioremediation.

(d) Degradation of PCBS.

2+2+3+3

6. (a) Prepare a list of microorganisms that are present in Extramural and Intramural environment and causing problem.

(b) Write the steps of microbial leaching of Cu from low grade ore ?

(c) What is bioventing?

(d) Name two common microbial diseases of fish.

4+4+1+1