



BBB-003-1194002

Seat No. _____

M. Sc. (Sem. IV) (CBCS) Examination

July - 2021

Microbiology

MICRO-420 : Extremophiles (2016)

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

Instruction : Attempt any five questions out of 10 questions given below.

- 1** Answer the following (Each of 02 marks) **14**
- (1) What are extremophiles used for?
 - (2) What are some examples of extremophiles?
 - (3) Give few examples of eukaryotic extremophiles.
 - (4) What are acidophiles? Give two examples.
 - (5) What are barophiles? Give two examples
 - (6) What are hypolith?
 - (7) What environmental factors are important for classification of the boundaries of life?
- 2** Answer the following (Each of 02 marks) **14**
- (1) What are methanogens? Give its importance.
 - (2) Give two examples of Alkaliphiles.
 - (3) What are moderate halophiles? Give two examples.
 - (4) What are Mesophiles? Give two examples.
 - (5) What are halotolerant? Give two examples.
 - (6) What are Osmophiles?
 - (7) What are Xerophiles?
- 3** Answer the following (Each of 07 marks) **14**
- (a) Write a note on eukaryotic extremophiles.
 - (b) Write a note on "Life at low pH".
- 4** Answer the following (Each of 07 marks) **14**
- (a) Write a note on osmoregulation strategy in Halophiles.
 - (b) Describe the role of the extreme environment in the distribution of extremophiles.

- 5** Answer the following (Each of 07 marks) **14**
(a) How halophiles operate compatible solute strategy and Salt in strategy?
(b) Write a note on barophiles and its adaptation strategy.
- 6** Answer the following (Each of 07 marks) **14**
(a) Write a note on the extremozymes and its applications.
(b) Write a note on "methanogenesis."
- 7** Answer the following (Each of 07 marks) **14**
(a) Write a note on "Life at hyper salinity."
(b) Describe the physiology and genetics of Alkaliphiles.
- 8** Answer the following (Each of 07 marks) **14**
(a) Describe the distribution and diversity of Psychrophiles.
(b) Write a note on Thermophilic archaea.
- 9** Answer the following (Each of 07 marks) **14**
(a.) Write a note on the biotechnological potentials of archaea.
(b) What are hyperthermophiles? Give applications of enzymes obtained from hyper thermophiles.
- 10** Answer the following (Each of 07 marks) **14**
(a) Describe unique features of archaea? How it differs from eubacteria?
(b) Write a note on taxonomic position and phylogenetic groups of archaea.
-