647510 **MSC4extC0210** **Seat No :_____**

M.Sc. Semester - 4 (*CBCS*) Examination
August/September -2020 [OLD COURSE]
EXTREMOPHILES (CORE)

Time: 2:00 Hours **Marks: 56**

Instructions:

1. Figures to the right indicate marks.
2. There are five questions in the question paper.
3. Answer any four of the following questions.

Q.1. Answer ANY SEVEN (2 Marks each) **14**

a. What are extreme habitats?
b. Write comment on the extremophile.
c. What are the basic objectives to study extremophiles?
d. Can microorganisms exist under multitude of the extremity?
e. Enlist various adaptation strategies in extremophilic microorganisms.
f. Enlist various habitats of thermophiles.
g. Comment on the methanogens?
h. Are there any similarly between eukaryotes and archaea?
i. What are hypertherextremophiles?
j. What is the correlation between the ultraextremity and microbial diversity?

Q.2. Write comments on ANY TWO of the following: **14**

a. Halophiles: Habitats and adaptation strategizes
b. Eukaryotic extremophilic microorganisms
c. Biotechnological significance of the thermophile

Q.3. Write short notes on:

a. Archaea: Habitats and Characteristics 5
b. Adaptations in hyperthermophiles 5
c. Biotechnological applications of Halophiles 4

OR

Q.3. Write comments on: (7 marks each) **14**

a. Metabolic diversity in archaea.
b. Pcychrophiles: Habitats and Adaptation

Q.4. Write comments on ANY TWO the following (7 marks each) **14**

a. Regulation of gene expression in Extremophiles
b. Extremozymes and their advantages
c. Barophiles: Habitats, Adaptations and Applications

Q.5. Write comments on ANY TWO: (7 marks each) **14**

a. Extremophiles and their role in bioremediation
b. Alkaliphiles: Physiological characteristics and Applications
c. Membrane transport and adaptations in extremophiles
d. Extremophiles and evolution

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