

Seat No. : _____

NF-103

December-2015

B.Sc., Sem.-V

Elective-305 : Environmental Science

(Life in the Extreme Environment)

(Common for Biotech / Envi. Sci.)

Time : 3 Hours]

[Max. Marks : 70

1. Answer the following questions : (any **two**) **14**
 - (a) Explain Radiation, Desiccation and high osmotic condition as a factor affecting the microbial life.
 - (b) Describe Shelford's Law of tolerance.
 - (c) Explain Liebig's law of minimum.
 - (d) Write note on molecular chaperons.

2. Answer the following questions : (any **two**) **14**
 - (a) Explain general characteristics of Thermophiles.
 - (b) Describe biotechnological significance of Thermophiles.
 - (c) Explain physiological aspects and metabolism in Thermophiles.
 - (d) Explain physical and chemical parameters of the Thermophilic habitats.

3. Answer the following questions : (any **two**) **14**
 - (a) Discuss biotechnological significance of Halophiles.
 - (b) Explain important sites and ecological parameters for Halophiles.
 - (c) Enlist the factors favorable for the Halophiles and explain any three in detail.
 - (d) Explain the general characteristics of common Halophiles.

4. Answer the following questions : (any **two**) **14**

- (a) Explain biotechnological significance of Acidophiles.
- (b) Describe physicochemical environment of Alkalophiles.
- (c) Explain the general characteristics of Barophiles.
- (d) Explain biotechnological significance of radio-tolerant bacteria.

5. Answer the following questions : (All are compulsory.) **14**

- (1) Define Xerophiles.
 - (2) Give the example of Radio-resistant bacteria.
 - (3) Give the example of Halophilic bacteria.
 - (4) Give the full form of HSP.
 - (5) Give the units for expressing salinity.
 - (6) Name two examples of Acidophiles.
 - (7) Define osmotic pressure.
 - (8) Name the novel organism of Thermophiles.
 - (9) Give the salt range of Halophiles.
 - (10) Give the example of Xerophiles.
 - (11) Give the habitat of Thermophiles.
 - (12) Define Barophiles.
 - (13) What is the average salt concentration in sea water ?
 - (14) Define water activity.
-