

Seat No. : _____

N17-132

November-2014

B.Sc., Sem.-V

SEC-305 : Common for Biotech Int./ Envi. Science

Life in the Extreme Environment

Time : 3 Hours]

[Max. Marks : 70

1. Answer the following questions : (any **two**) **14**
 - (a) Explain Pressure, Acidity and Alkalinity as a factor affecting the microbial presence.
 - (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 of metabolism in Thermophiles.
 - (d) Explain physical and chemical aspects 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 favourable to 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)

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- (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 two 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.
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