

Seat No. : _____

N39-103

December-2014

B.Sc., Sem.-I

**BTI-101 : Biotechnology
(The Living World)**

Time : 3 Hours]

[Max. Marks : 70

1. Answer any **two** : **14**
- (A) Discuss the theories for origin of life over the Earth.
 - (B) Describe Miller's experiment and its relevance to describe origin of life.
 - (C) How Mitochondria and Chloroplast helped evolution of eukaryotes ?
 - (D) Explain the concept of Whittaker's five kingdom with diagram.
2. Answer any **two** : **14**
- (A) Discuss the general characteristics of plants.
 - (B) Describe Morphogenesis and differentiation in plants.
 - (C) Write note on adaption of plants in response to environmental changes.
 - (D) List the common types of plants and discuss characters of any one of them.
3. Answer any **two** : **14**
- (A) Explain the outline of kingdom Animalia.
 - (B) Discuss the general biological characteristics of animals.
 - (C) Describe organization of animal body.
 - (D) Summarize evolution of animals.
4. Answer any **two** : **14**
- (A) Describe the general characters of protozoa.
 - (B) Give economic importance of fungi.
 - (C) Write short note on chemistry of viruses.
 - (D) List extreme types of environments and explain life therein.

5. Write any **seven** :

14

- (1) Write two features of cell theory.
 - (2) Define Cell differentiation with example.
 - (3) How extra-terrestrial life is searched ?
 - (4) Give functions of vascular tissues of plants.
 - (5) Why Bryophytes are known as primitive plants ?
 - (6) Give two functions each for Root and Stem of plants.
 - (7) How organs and tissues are coordinated in animals ?
 - (8) Draw diagram of algal cell.
 - (9) Define viroids with examples.
 - (10) List classes of fungi and give two characteristics of any one class.
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- Que 1 (A) Explain the concept of Spontaneous generation and its disproof (7)
OR
(A) Describe Whittaker's Five Kingdom Concept with appropriate diagram
(B) Explain the origin of the Earth as per Big-bang theory (7)
OR
(B) Describe Miller's experiment with appropriate diagram
- Que 2 (A) Discuss the outline of Kingdom *Plantae*. (7)
OR
(A) Discuss the features of *Bryophytes*.
(B) Explain mechanism for plant adaptation to land (7)
OR
(B) List general characters of Plants and explain its body organization
- Que 3 (A) Describe the general characters of animals (7)
OR
(A) Write a note on Primitive and Advanced marine animals
(B) Describe the body organization among animals (7)
OR
(B) Discuss the outline of Kingdom *Animalia*
- Que 4 (A) Discuss the general characters of Fungi (7)
OR
(A) Describe the structure and give importance of Prions
(B) Write a note on characters and importance of Algae. (7)
OR
(B) Describe the economic importance of Fungi
- Que 5 Answer all in brief. (14)
1. Give reason for expecting existence of life over the Mars
 2. List factors that allowed aggregation of organic molecules for developing life
 3. How Mitochondria have evolved?
 4. What is cell differentiation ?
 5. Name the vascular tissues in the plants and its function
 6. Define Primary and Secondary growth
 7. What is Morphogenesis in plants ?
 8. How animals derive their energy?
 9. List two conditions of extreme environment
 10. Give two examples showing adaptation in animals
 11. Name two protozoa causing human diseases
 12. Define Viroids
 13. Define 'sexual reproduction' with regards to fungi
 14. What is Icosahedron ?