PG Even Semester (CBCS) Exam., May—2019

LIFE SCIENCE AND BIOINFORMATICS

(4th Semester)

Course No. : LSBCC–401 (B/Z)

Full Marks : 70
Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions

Botany students will answer from LSBCC–401 (B) and Zoology students will answer from LSBCC–401 (Z)

Course No. : LSBCC–401 (B)

(MYCOLOGY AND PLANT PATHOLOGY)

Answer **five** questions, selecting **one** from each Unit

UNIT—I

1. *(a)* Discuss the unique features associated with the members of kingdom Fungi.

(b) How are fungi different from Oomycota and Microsporidia? 7+7=14

2. Write short notes on the following : 7+7=14

(a) Distinguishing features of phylum Dikarya

(b) Molecular tools for fungal identification

UNIT—II

3. Discuss the plant biomass composition. Explain the fungal enzyme systems for decomposition of each plant biomass component. 4+10=14

4. Write short notes on the following : 7+7=14

(a) Types of mycorrhizal associations

(b) Fungal Non-β-lactam antibiotics

UNIT—III

5. Illustrate giving examples the principles of biological plant disease control methods. How is it better than chemical means? 10+4=14

6. Discuss the symptoms, disease cycle and control measures of one disease caused by fungi or bacteria. 14

UNIT—IV

7. Illustrate giving examples the molecular basis of pathogen recognition by plants. 14

8. Elucidate the roles of the following in plant defense mechanisms : 14

(a) PR proteins

(b) Phytoalexins

(c) Oxidative burst

UNIT—V

9. What are the Indian quarantine laws related to plant and its product movements? 14

10. What are resistant varieties of crops? Illustrate with examples, how genetic engineering helps in creating disease resistant varieties in a suitable plant model. 4+10=14

Course No. : LSBCC–401 (Z)

(LIMNOLOGY, WETLAND BIOLOGY AND BIOSYSTEMATICS)

1. Define limnology. Describe its scope and aspects as a branch of science. Add a note on the status of limnology in India. 2+6+6=14

OR

2. Write short notes on the following : 3½×4=14

(a) Classification of lakes

(b) Eutrophication

(c) Management of siltation

(d) GIS

3. Give a detailed account of the wetlands of Assam in the light of their classification and distribution. 14

OR

4. Write short notes on the following : 3½×4=14

(a) Lentic habitats in India

(b) Management of lotic systems

(c) Potentialities of beels of Assam

(d) Aquatic habitats

5. What is taxonomy? State its different stages. Discuss in detail the contribution of Indian taxonomists. 2+2+10=14

OR

6. Write notes on the following : 7+7=14

(a) Species concept

(b) Linnean hierarchy

7. Give an account of the major taxonomic museums in India. How are they maintained? 7+7=14

OR

8. Write short notes on the following : 3½×4=14

(a) Curating

(b) Cataloguing

(c) Taxonomic keys

(d) Type concept

9. What do you mean by molecular taxonomy? Describe how taxonomy helps provide evidences of organic evolution. 4+10=14

OR

10. Write notes on the following : 7+7=14

(a) International Code of Zoological Nomenclature

(b) Recent trends in taxonomy

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