

PG Even Semester (CBCS) Exam., May—2018

LIFE SCIENCE AND BIOINFORMATICS

(4th Semester)

Course No. : LSB-401

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)

(For Botany Students)

Course No. : LSBCC-401 (B)

(MYCOLOGY AND PLANT PATHOLOGY)

1. Discuss the process of parasexual cycles in fungi highlighting its industrial uses. 14

OR

2. Give an account of current trend in fungal classification. Add a note on the features that delineate each group. 7+7=14

8J/1460

(Turn Over)

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

- (a) Fungal antibiotics
(b) Biodegradation of cellulose

OR

4. Explain the beneficial effects of fungal symbionts on plant health and biology. 14

5. Discuss the features, hosts, symptoms and identification of tobacco mosaic virus (TMV). 14

OR

6. Explain the drawbacks of physical, chemical and biological plant disease control. Elaborate a few mechanisms of biological control of plant diseases. 4+10=14

7. Discuss the molecular basis of host recognition by a pathogen. Illustrate your answer with suitable diagrams wherever necessary. 14

OR

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

- (a) PR proteins
(b) Role of plant phenolics and phytoalexins

8J/1460

(Continued)

(3)

9. Giving suitable examples, discuss how genetic engineering is helping to create disease-resistant plants. 14

OR

10. Write short notes on the following : 7+7=14
(a) Postharvest biological disease control
(b) Nematicides

(4)

(For Zoology Students)

Course No. : LSBCC-401 (Z)

(LIMNOLOGY, WETLAND BIOLOGY AND
BIOSYSTEMATICS)

1. Differentiate between biosystematics and taxonomy. State different stages of taxonomy. Discuss the scope and significance of taxonomic studies. 2+2+10=14

OR

2. Define species. What is classification? Write briefly about different species concepts. Discuss briefly the purposes, functions and components of zoological classification. $1\frac{1}{2}+1\frac{1}{2}+5+6=14$
3. What is the purpose of taxonomic museum? Discuss briefly the salient features of a taxonomic museum with regards to collection, preservation and catalogueing of an animal diversity museum. 3+11=14

OR

4. Discuss briefly about the type concept, taxonomic keys and taxonomic literature. Add a note on Linnean hierarchy. 4+5+5=14

(5)

5. Define limnology. Write a paragraph on the scope of limnological studies. Name some Indian scientists in the field of limnology.
2+10+2=14

OR

6. What is eutrophication? Discuss the problems due to eutrophication with particular reference to management of weeds.
2+12=14
7. Describe briefly the origin and classification of lakes and wetlands. Also discuss briefly the physicochemical and biological characteristics of any one lentic body in India with special emphasis on the 'Beels' of North-East India and Assam.
4+10=14

OR

8. Describe briefly the origin and classification of rivers. Discuss briefly the physicochemical and biological characteristics of any one lotic system in India with special reference to North-East India and Assam. Add a note on the management and conservation of the rivers and their resources.
3+7+4=14

(6)

9. Write explanatory notes on the following :
7+7=14
- (a) Palaeolimnology
(b) Remote sensing

OR

10. Write short notes on the following : 7+7=14
- (a) Taxonomy providing evidences of organic evolution
(b) Molecular taxonomy
