

PG Odd Semester (CBCS) Exam., December—2018

LIFE SCIENCE AND BIOINFORMATICS

( 3rd Semester )

Course No. : LSBCC-303

*Full Marks : 70*

*Pass Marks : 28*

*Time : 3 hours*

*The figures in the margin indicate full marks  
for the questions*

Candidates have to answer *either* from GROUP—A  
Course No. : LSBCC-303 (B) *or* GROUP—B Course  
No. : LSBCC-303 (Z)

GROUP—A

Course No. : LSBCC-303 (B)

( PLANT DIVERSITY )

Answer **all** questions

1. Write notes on the following : 7+7=14
- (a) Cellular structure of eukaryotic algae
- (b) Recent classification system of algae

OR

2. Write a detailed account on the diversity of thallus structure in algae and their evolutionary trends. Write a note on the pheromone signalling during sexual reproduction in algae. 10+4=14
3. Write notes on the following : 7+7=14
- (a) Peristome teeth and their taxonomic significance in classification of mosses
- (b) Gemma cup and gemmae

OR

4. Write an account on the evolution of sporophytes in bryophytes. Add a note on the classification of bryophytes. 10+4=14
5. Write notes on the following : 7+7=14
- (a) Apogamy and apospory
- (b) Origin of land plants

OR

6. Describe telomic concepts and its application to evolution of sporophyte. 14

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7. Discuss in detail the morphology and anatomy of vegetative and reproductive organs of the genus *Gnetum*. Write a note on the angiospermic characters of *Gnetum*. 10+4=14

**OR**

8. Write notes on the following : 7+7=14
- (a) Distribution of living gymnosperms in India
- (b) Reproductive characters of *Taxus*
9. (a) Discuss the role of algae in agriculture and as food. 7
- (b) Discuss the role of bryophytes as pollution indicator. 7

**OR**

10. (a) Write a note on the medicinally important pteridophytes with examples. 7
- (b) Write a note on algal bloom and phycotoxins. 7

( 4 )

GROUP—B

Course No. : LSBCC-303 (Z)

( **EVOLUTION AND BEHAVIOUR** )

Answer **all** questions

1. Describe Lamarckian concept of evolution with examples. Write a note on neo-Lamarckian versions of evolution. 10+4=14

**OR**

2. Describe the modern synthetic theory of evolution explaining how the various factors guide the course of evolution. 14
3. Write in detail on the origin of new genes describing evolution and phenotypic impact of new genes. 14

**OR**

4. Write notes on the following : 7+7=14
- (a) Neutral theory of molecular evolution
- (b) Molecular clock
5. Write in detail how isolating mechanisms lead to the process of speciation citing examples. 14

( 5 )

**OR**

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

(a) Genetic drift

(b) Hardy-Weinberg law

7. Write in detail on the neural basis of learning and memory describing the changes in synaptic function. 14

**OR**

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

(a) Approaches in study of behaviour

(b) Sleep and arousal

9. What is animal behaviour? Write in detail on the sexual selection and reproductive strategies. 4+10=14

**OR**

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

(a) Parental care

(b) Altruism and evolution—Group selection and Kin selection

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