PG Odd Semester (CBCS) Exam., December—2017

LIFE SCIENCE AND BIOINFORMATICS

(3rd Semester)

Course No. : LSBCC–303 (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 Option—B : LSBCC–303 (B) and Zoology students will answer from Option—Z : LSBCC–303 (Z)

OPTION—B

Course No. : LSBCC–303 (B)

(Plant Diversity)

1. Write a comparative account of pigments, food reserves, flagella types between cyanophyceae, Chlorophyceae and Rhodophyceae. Discuss the taxonomic importance of chloroplasts and eye spots in algae. 10+4=14

OR

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

(a) Cellular structure of prokaryotic algae

(b) Sexual reproduction in algae

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

(a) Evolution in Bryophytes

(b) Sporophyte of *Anthoceros*

OR

4. Write a comparative account of morphological structures of gametophytes in different classes of Bryophytes with neat sketches. 14

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

(a) Telome theory

(b) Sorus in ferns and its systematic relevance

OR

6. Discuss heterospory and seed habit in pteridophytes with proper diagram. 14

7. *(a)* Write a note on distribution of fossil Gymnosperms in India. 7

(b) Evolution of archegonium in Gymnosperms. 7

OR

8. Discuss in detail the morphology and anatomy of vegetative and reproductive organs of the genus *Pinus*. 14

9. Write notes on the following : 5+5+4=14

(a) Algal bloom

(b) Horticulturally important pteridophytes

(c) Resin yielding Gymnosperms and its use

OR

10. Write an account of the importance of Bryophytes in horticulture, industry and medicine. Write a short note on the role of Bryophytes in soil binding. 10+4=14

OPTION—Z

Course No. : LSBCC–303 (Z)

(Evolution and Behavior)

1. Describe Charles Darwin's contribution to the theory of evolution. What does survival of the fittest mean in reference to natural selection and evolution? 10+4=14

OR

2. Write a descriptive note on mutation as an elemental force of evolution. 14

3. Write a note on origin of new genes during evolution. 14

OR

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

(a) Gene duplication and divergence

(b) Molecular clocks

5. Discuss genetic drift and the causes of genetic drift. 14

OR

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

(a) Allopatric and sympatric speciation

(b) Hardy-Weinberg law

7. Write a detailed note on sleep and arousal, also mentioning the various theories proposed for function of sleep. 14

OR

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

(a) Approaches and methods in study of behaviour

(b) Cognition

9. Write in detail on parental care in various living organisms. Write a note on parental investment and reproductive success. 8+6=14

OR

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

(a) Altruism

(b) Social dominance and territoriality

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