**PG Odd Semester (CBCS) Exam., December—2016**

# 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*

Botany students will answer from LSBCC–303 (B) and Zoology students will answer from LBSCC–303 (Z)

## OPTION—A

Course No. : LSBCC–303 (B)

**( Plant Diversity )**

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

(a) Pheromones in algae

(b) Vegetative reproduction in algae

(c) Food reserves of algae





**OR**

**2.** Compare the cellular structure of prokaryotic and eukaryotic algae with neat illustrations. Write a note on tinsel and whiplash type of flagella. 7+4+3=14

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

(a) Oil bodies in bryophytes and their taxonomic importance

(b) Peristome teeth in moss and their types

(c) Classification of bryophytes

**OR**

**4.** Compare the morphological features of sporophytes in bryophytes and add a note on evolution of sporophytes in bryophytes. 9+5=14

**5.** (a) Write a detailed note on origin of land plants. 7

(b) Define sorus. Discuss in detail the soral evolution in ferns. 7

**OR**

**6.** Write notes on the following : 4+7+3=14

(a) Apospory and apogamy

(b) Heterospory and seed habit

(c) Homosporous pteridophytes

**7.** Describe the broad outline classification of gymnosperms and distinguishing features of each group. Discuss briefly the evolutionary significance of gymnosperms. 9+5=14

**OR**

**8.** *(a)* "There is gradual elimination of female sex organ archegonium in gymnosperms." Justify the statement. 7

*(b)* Write down the angiospermic features of the genus *Gnetum*. 7

**9.** Discuss in detail the economic importance of gymnosperms. Write a note on edible algae. 9+5=14

**OR**

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

*(a)* Role of bryophytes in plant succession

*(b)* Algae as biofertilizers

*(c)* Medicinal pteridophytes





OPTION—B

Course No. : LSBCC–302 (Z)

**( Evolution and Behavior )**

**1.** Describe and discuss the Lamarckian and Darwinian concepts of evolution. 14

**OR**

**2.** Write an essay on 'mutation as an elemental force of evolution'. Add a note on the synthetic theory of evolution. 10+4=14

**3.** Write a descriptive note on the origin of new genes with illustrations. 14

**OR**

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

*(a)* Gene duplication

*(b)* Molecular clock

**5.** Mention the difference between allopatric and sympatric speciation. Discuss various isolating mechanisms in the process of speciation. 2+12=14

**OR**

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

*(a)* Gene pool, gene frequency and genotype frequency

*(b)* Hardy-Weinberg law

**7.** Give a detailed account of the neural basis of learning and memory. 14

**OR**

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

*(a)* Sleep and arousal

*(b)* Circardian rhythm

**9.** What is social communication? Write notes on sexual selection and reproductive strategies. 4+10=14

**OR**

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

*(a)* Alstruism

*(b)* Parental care

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