

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

LIFE SCIENCE AND BIOINFORMATICS

(3rd Semester)

Course No. : LSBCC-302

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-302 (B) *or* GROUP—B Course
No. : LSBCC-302 (Z)

GROUP—A

Course No. : LSBCC-302 (B)

(**MORPHOLOGY, DIFFERENTIATION AND
SYSTEMATIC BOTANY**)

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

UNIT—I

1. Write a detailed note on different types of racemose inflorescence with illustrations. Add a note on evolution of inflorescence.

10+4=14

2. Write notes on the following : 7×2=14
(a) Placentation and its types
(b) Modification of calyx

UNIT—II

3. With neat diagram, describe the process of Megagametogenesis in Angiosperm. 14
4. Write notes on the following : 7×2=14
(a) Self-incompatibility
(b) Double fertilization

UNIT—III

5. Discuss different types of male sterility and their significance in horticulture. 14
6. Write a note on polyembryony and its ecological significance. 14

UNIT—IV

7. Write notes on the following : 3½×4=14
(a) Holotype
(b) Later homonym
(c) Microsatellite markers
(d) Sympatric speciation

(3)

8. Write a detailed account on the activities of Botanical Survey of India (BSI). Add a note on herbarium database. 8+6=14

UNIT—V

9. Write notes on the following : 7×2=14
- (a) Endangered and threatened plants of India
- (b) Floristic wealth of Western Ghat
10. Write an account on the phylogeny and floral evolution in Zingiberales. Name four economically important plant species of the family Zingiberaceae. 12+2=14

(4)

GROUP—B

Course No. : LSBCC-302 (Z)

(APPLIED BIOLOGY)

Answer **all** questions

1. Define live and attenuated vaccines. Explain the mode of action of DNA vaccines and their significance. 4+10=14

OR

2. Write short notes on the following : 7+7=14
- (a) Chimeric phage display
- (b) Recombinant vaccines

3. What is toxicological risk? Elaborate on the common means of risk assessment and characterization. 2+12=14

OR

4. What is bioremediation? What are the different types of bioremediation? Discuss the various phytoremediation strategies applied for remediation of inorganic pollutants. 2+3+9=14

(5)

5. What are endemic animals? What is IUCN Red List? Enumerate various Biodiversity Acts formulated to protect Indian wildlife.
2+3+9=14

OR

6. Write short notes on the following : 7+7=14
(a) Inbreeding depression
(b) Wildlife census
7. What are parasites? Name some common habitat preferences of human parasites. Add a note on various vector-borne diseases.
2+8+4=14

OR

8. Discuss the host-parasite interactions with special reference to immunity and resistance. 14
9. Elaborate the life cycle of a pathogen causing malaria in man. Discuss the pathogenesis of *Plasmodium falciparum*. 8+6=14

OR

10. Write short notes on the following : 7+7=14
(a) Life cycle of *Fasciola hepatica*
(b) Pathogenesis of *Wuchereria bancrofti*

★ ★ ★