

**2019
BIOLOGY**

Total marks : 70

Time : 3 hours

General instructions:

- i) *Approximately 15 minutes is allotted to read the question paper and revise the answers.*
- ii) *All questions are compulsory. Marks are indicated against each question.*
- iii) *The question paper consists of two parts – Part A and Part B.
Each part contain 14 questions.*
- iv) *Internal choice has been provided in some questions.*
- v) *Write the answers of Part A and Part B in separate answer books.
Marks shall not be awarded if the answers of both the Parts are written in one book nor marks awarded if answers of Part A are written in the answer book of Part B and vice-versa.*

N.B: *Check that all pages of the question paper is complete as indicated on the top left side.*

PART - A

1. Vegetative propagation by bulbils is found in **1**
(a) *Begonia* (b) *Dioscorea*
(c) *Rose* (d) *Bryophyllum*

2. Ubisch bodies are secreted by **1**
(a) *tapetum* (b) *exine*
(c) *microspore mother cell* (d) *endothecium*

3. Which one of the following does not follow the central dogma of molecular biology? **1**
(a) *Pea* (b) *Mucor*
(c) *Chlamydomonas* (d) *HIV*

4. Somatic hybridization can be done by **1**
(a) *protoplast fusion* (b) *cell culture*
(c) *haploid anther* (d) *pollen culture*

5. A healthy aquatic ecosystem has a D.O content of **1**
(a) *1600 mg/Lt* (b) *1000 mg/Lt*
(c) *1400 mg/Lt* (d) *400 mg/Lt*

6. Write two points of differences between anemophilous and entomophilous flowers. 2
7. What is gross primary productivity? In what unit is it expressed? 2
8. Write two effects of peroxyacetyl nitrate (PAN). 2
9. Draw a neat labelled diagram of T.S of mature anther. 3
10. **a.** List the raw materials and its functions involved in protein synthesis. 3
Or
b. Give six essential features of genetic code.
11. What is plant tissue culture? Write its two applications. 3
12. **a.** Explain the process of replication of DNA with the help of a suitable diagram. 5
Or
b. Explain the functioning of Lac-Operon system with the help of a diagram.
13. **a.** Explain the processes involved in Recombinant DNA technology. 5
Or
b. What is Polymerase Chain Reaction (PCR)? Explain in detail the various steps involved in PCR.
14. **a.** Discuss the various strategies of ex-situ conservation. 5
Or
b. Describe the major causes of biodiversity loss.

PART –B

1. Mammary glands are modified 1
 (a) sweat glands (b) lacrymal glands
 (c) sebaceous glands (d) endocrine glands
2. The permissible use of the technique amniocentesis is for 1
 (a) detecting sex of the unborn foetus
 (b) artificial insemination
 (c) transfer of embryo into the uterus of a surrogate mother
 (d) detecting any genetic abnormality

3. Haemophilia is a 1
(a) deficiency disorder (b) Y-linked disorder
(c) X-linked disorder (d) autosomal sex disorder
4. Passive immunity can be obtained by injecting 1
(a) antibodies (b) antigens
(c) antibiotics (d) vaccination
5. These parasites cannot survive without host: 1
(a) Facultative (b) Obligate
(c) Brood (d) Hyper parasites
6. What are test cross and back cross? 2
7. When is tumour referred to as malignant? 2
8. What is meant by bioethics? Mention one bioethical concern. 2
9. Name three transgenic micro organisms and their application. 3
10. a. What is incomplete dominance? Explain the inheritance pattern of incomplete dominance in 4 O'clock plant. 3
Or
b. Explain the three types of natural selection.
11. Describe briefly the biological effects of light on animal reproduction. 3
12. a. Define oogenesis. Explain the stages of oogenesis. 5
Or
b. Briefly explain the natural methods and surgical methods of birth control.
13. a. What is Human Genome Project? Mention any four goals of HGP. 5
Or
b. Bring out the differences between Darwinism and Neodarwinism.
14. a. What is allergy? Describe the different forms of allergy and the treatment available. 5
Or
b. What is biogas? What are the advantages of biogas?
