

Total No. of Printed Pages—4

**HS/XII/Sc/Bio-Bot/OC/21**

**2 0 2 1**

**BIO-BOTANY**

( Old Course )

( **Theory** )

*Full Marks* : 35

*Time* : 1½ hours

*General Instructions* :

- (i) Write all the answers in the Answer Script.
- (ii) All questions are compulsory.
- (iii) Attempts all parts of a Group serially in one place.
- (iv) The figures in the margin indicate full marks for the questions.
- (v) The question paper consists of 5(five) Groups—A, B, C, D and E.

Group—A consists of 4 questions (Q. Nos. **1-4**) of 1 mark each and is multiple-choice type.

Group—B consists of 4 questions (Q. Nos. **5-8**) of 1 mark each, very short-answer type, to be answered in 1 sentence each.

Group—C consists of 4 questions (Q. Nos. **9-12**) of 2 marks each, short-answer type-I, to be answered in 20-30 words each.

Group—D consists of 3 questions (Q. Nos. **13-15**) of 3 marks each, with one alternative from the same unit, short-answer type-II, to be answered in 30-40 words each.

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Group—E consists of 2 questions (Q. Nos. **16** and **17**) of 5 marks each, with one alternative for each question, long-answer type, to be answered in 70–80 words each.

GROUP—A

Choose and write the correct answer for the following: 1×4=4

1. Transfer of pollen to the stigma of another flower of the same plant is
  - (a) autogamy
  - (b) allogamy
  - (c) xenogamy
  - (d) geitonogamy
  
2. Which of the following is a process in protein synthesis?
  - (a) Transversion
  - (b) Transformation
  - (c) Translation
  - (d) Translocation
  
3. Penicillin—an antibiotic is obtained from
  - (a) algae
  - (b) fungus
  - (c) bacteria
  - (d) yeast

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4. Green plants constitute

- (a) first trophic level
- (b) second trophic level
- (c) third trophic level
- (d) fourth trophic level

GROUP—B

- 5. Define parthenocarpy. 1
- 6. What is multiple allelism? 1
- 7. Name the bacterium responsible for converting milk into curd. 1
- 8. Define biotechnology. 1

GROUP—C

- 9. What are transgenic plants? Give two examples. 1+1=2
- 10. Write four objectives of plant breeding. 2
- 11. What are ecological pyramids? Name the types of ecological pyramids. 1+1=2
- 12. Give the importance of cyclosporin A and statins. 1+1=2

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GROUP—D

- 13.** Draw a labelled diagram of longitudinal section of an ovule of angiosperms. 3
- 14.** Explain complementary gene interaction with the help of an example. 3

*Or*

What is the inducer in the *lac* operon? How does it ensure 'switching on' of genes? 1+2=3

- 15.** Write the techniques of plant tissue culture. 3

GROUP—E

- 16.** Define succession. Explain the process of succession in the newly formed pond or lake. 1+4=5

*Or*

Explain briefly the biotic components of an ecosystem. 5

- 17.** Define transcription. Explain the process of transcription in bacteria with suitable diagram. 1+3+1=5

*Or*

Explain the chromosomal theory of inheritance. 5

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