

Total No. of Printed Pages—5

HS/XII/Sc/Bio-Bot/14

2 0 1 4

BIO-BOTANY

(Theory)

Full Marks : 35

Time : 1½ hours

General Instructions :

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

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

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

Group—C consists of 3 questions (Nos. **9-11**) of 3 marks each, with one alternative from the same Unit, short-answer type-I, to be answered in 20-30 words each.

(2)

Group—D consists of 2 questions (Nos. **12** and **13**) of 4 marks each, with one alternative from the same Unit, short-answer type-II, to be answered in 30–40 words each.

Group—E consists of 2 questions (Nos. **14** and **15**) of 5 marks each, with one alternative for each question, long-answer type, to be answered in 70–80 words.

GROUP—A

Choose and write the correct answer for the following :

1×4=4

1. Transfer of pollen grains from one flower to the stigma of another flower of the same plant is

- (a) autogamy
- (b) allogamy
- (c) xenogamy
- (d) geitonogamy

2. In incomplete dominance, the phenotypic ratio for F₂ generation is

- (a) 3 : 1
- (b) 1 : 2 : 1
- (c) 9 : 7
- (d) 9 : 3 : 3 : 1

(3)

3. The part of the flower removed in emasculation is

(a) perianth

(b) stigma

(c) anther

(d) ovule

4. In a food chain, herbivores are

(a) primary producers

(b) primary consumers

(c) secondary consumers

(d) decomposers

GROUP—B

5. Define parthenocarpy. 1

6. What are Okazaki fragments? 1

7. Define biofortification. 1

8. What is Bt cotton? 1

(4)

GROUP—C

- 9.** Describe briefly the role of microbes in the production of biogas. 3
- 10.** Explain food chain with suitable diagram. 3

Or

Explain ecological pyramids with suitable diagrams.

- 11.** Write a note on incomplete dominance. 3

GROUP—D

- 12.** Describe different types of cross pollination in plants. 4
- 13.** What are genetically modified organisms? Explain its significance. 4

Or

Explain briefly the application of biotechnology in agriculture.

(5)

GROUP—E

14. Describe the mechanism of DNA replication. 5

Or

Explain the chromosome theory of inheritance.

15. Describe the positive interactions amongst different species. 5

Or

Explain different types of ecological adaptation in hydrophytes.
