Total No. of Printed Pages—4

HS/XII/Sc/Bio-Bot/15

2 0 1 5

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.

(vi) General Candidates are not allowed to attempt the questions meant for Elementary School Teacher Candidates.

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.

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 each.

GROUP—A

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

1. Inheritance of ABO blood group shows

(a) polygyny

(b) polyploidy

(c) multiple allelism

(d) incomplete dominance

2. Pollination by air is called

(a) aerospory

(b) entomophily

(c) anemophily

(d) ornithophily

3. The microbe responsible for converting milk into curd is

(a) *Penicillium*

(b) *Aspergillus*

(c) *Saccharomyces*

(d) *Lactobacillus*

4. Shade-loving plants are called

(a) heliophytes

(b) sciophytes

(c) hydrophytes

(d) xerophytes

GROUP—B

5. Define biotechnology. 1

6. Define incomplete dominance. 1

7. What is a callus? 1

8. Define biopatent. 1

GROUP—C

9. Describe briefly the role of microbes in sewage treatment. 3

10. What are transgenic plants? Explain with example. 1+2=3

11. Write a note on symbiosis. 3

Or

Write the ecological adaptations of xerophytes.

GROUP—D

12. Define double fertilization. Explain the process with the help of suitable diagrams. 1+2+1=4

13. Explain complementary genes with examples. 4

Or

Explain briefly the types of mutations. 4

GROUP—E

14. Describe the mechanism of translation with suitable diagrams. 4+1=5

Or

Explain Lac operon with suitable diagram. 4+1=5

15. Explain briefly the biotic components of an ecosystem. 5

Or

Explain energy flow in an ecosystem with suitable diagrams. 4+1=5

(For Elementary School Teacher Candidates only in lieu of Question Nos. 14 and 15)

Answer any *five* of the following questions : 2×5=10

1. What is pollination?

2. What are parthenocarpic fruits? Give example.

3. Define mutation.

4. Expand DNA and RNA.

5. What is plant breeding?

6. Name the bacterium responsible for converting milk into curd.

7. What is green revolution?

8. What are Genetically Modified organisms? Give example.

9. Write two characters of xerophytes.

10. What is a food chain? Draw a food chain.

★ ★ ★