

28

BOTANY
Paper II

Time Allowed : Three Hours

Maximum Marks : 200

QUESTION PAPER SPECIFIC INSTRUCTIONS

Please read each of the following instructions carefully before attempting questions.

There are EIGHT questions in all out of which FIVE are to be attempted.

Question No. 1 and 5 are compulsory. Out of the remaining SIX questions, THREE are to be attempted selecting at least ONE question from each of the two Sections A and B.

Attempts of questions shall be counted in chronological order. Unless struck off, attempt of a question shall be counted even if attempted partly. Any page or portion of the page left blank in the Answer Book must be clearly struck off.

All questions carry equal marks. The number of marks carried by a question/part is indicated against it.

Answers must be written in ENGLISH only.

Neat sketches may be drawn, wherever required.

SECTION 'A'

1. Explain the following in about 150 words each :
 - 1.(a) Basic chromosome number may be different from haploid number. 8
 - 1.(b) Can an accessory chromosome become an essential chromosome? 8
 - 1.(c) Ribosomes are synthesized? 8
 - 1.(d) Presence of factors for all the seven characters studied by Mendel on a single chromosome would have affected Mendel's work? 8
 - 1.(e) ISH has helped in better understanding of cell biology? 8
- 2.(a) How is a tertiary trisomic identified? Draw and describe various disjunctional possibilities of the chromosome associations formed during meiosis in a tertiary trisomic. 5+20
- 2.(b) With the help of a well established example explain transversions. 15
- 3.(a) What is achieved through back cross breeding? Describe the procedure and explain what will happen if the original parents are not pure lines? 5+15
- 3.(b) Describe stepwise how goodness of fit is established for an assumption? 20
- 4.(a) What is accounted for by Lyon's hypothesis? Cite an example. 5+5
- 4.(b) What is tripartite type of sex determination? Justify your answer with suitable example. 10
- 4.(c) With the help of U's triangle explain the role of amphiploides in evolution of crop plants. 20

SECTION 'B'

5. Write brief notes on the following in about 150 words each :
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| 5.(a) | Endemism | 8 |
| 5.(b) | NOD genes | 8 |
| 5.(c) | Eutrophication | 8 |
| 5.(d) | Fermentation | 8 |
| 5.(e) | Allelopathy | 8 |
| 6.(a) | Describe the adverse anthropogenic effects on terrestrial ecosystems. How can these be mitigated ? | 15+5 |
| 6.(b) | Explain various physiological processes that help in fruit ripening. How can this knowledge help overcome problems likely to be faced because of climate change ? | 15+5 |
| 7.(a) | Describe various structural and chemical defence mechanisms developed by plants. | 20 |
| 7.(b) | Describe the process explained by chemiosmotic theory. | 20 |
| 8.(a) | Describe bottom up regulation of plant respiration. | 20 |
| 8.(b) | Describe the differences and importance of afforestation, reforestation and social forestry. | 20 |
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