

Total Pages—5

UG/II/BOT/H/IV/16(Old)

2016

BOTANY

[Honours]

PAPER – IV

Full Marks : 90

Time : 4 hours

*The figures in the right hand margin indicate marks
Candidates are required to give their answers in their
own words as far as practicable*

Illustrate the answers wherever necessary

[OLD SYLLABUS]

GROUP – A

1. Answer any *ten* of the following : 2 × 10
- (a) Why is water potential of a solution always negative ?
- (b) Define PQ and RQ.

(Turn Over)

- (c) Mention the role of ABA on stomatal behaviour.
- (d) Expand the abbreviations : NAA and IBA.
- (e) What are P_r and P_{fr} form of phytochrome ?
- (f) What is isoenzyme ?
- (g) What are prosthetic groups ?
- (h) Write two sulphur containing amino acids.
- (i) Define monosaccharides. Cite an example.
- (j) Explain substrate level phosphorylation.
- (k) What is critical day length in respect of flowering ?
- (l) What specific function is performed by leghaemoglobin in modulation process ?
- (m) What are biotic and abiotic pollution ?
- (n) What is Chipko movement ?
- (o) Define endemism.

GROUP – B

2. Answer any *five* questions : 8 × 5

(a) Distinguish between dark respiration and photorespiration. Describe in brief and schematically represent the Krebs Cycle mentioning the major enzymes involved therein. 2 + 6

(b) Define stress. Give an outline classification of stress. Name one biochemical indicator of stress. 2 + 5 + 1

(c) Define population. Enumerate the attributes of population. 2 + 6

(d) What are peptide bonds of proteins ? Give an overview of the translation phase of protein synthesis. 2 + 6

(e) Define innate and induced dormancy of seeds. Enumerate the causes and significance of seed dormancy. 2 + 6

- (f) What are afforestation and deforestation ?
Write down the major causes and consequences of deforestation. 2 + 6
- (g) What does it mean by biodiversity and phytodiversity ? Discuss in brief on conservation of biodiversity. 3 + 5
- (h) What is plant geography ? Briefly describe about the different phytogeographical regions of India. 2 + 6

GROUP – C

3. Answer any *two* of the following : 15 × 2
- (a) How are plants classified on the basis of their photoperiodic responses ? Mention the concept of florigen and photoperiodic stimulus. Discuss the role of phytochrome in flowering mentioning its chemical nature. 5 + 4 + 6
- (b) Mention Michaelis-Menten equation. Write the significance of K_m . Discuss the role of IAA in plants. 2 + 3 + 10

- (c) What are the different types of plant adaptation encountered in plants? Write down different adaptive features noted in xerophytes and hydrophytes. State the different components of ecosystem and their specific roles. 2 + 10 + 3
- (d) Write short notes on any *five* of the following: 3 × 5
- (i) Cyanide resistant respiration;
 - (ii) Transcription phase of protein synthesis;
 - (iii) Importance of organic farming;
 - (iv) Saturated and unsaturated fatty acids;
 - (v) Acid rain;
 - (vi) Geographical Information System;
 - (vii) Green house effect; and
 - (viii) Mangroves.
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