

**Total Pages—5**

**UG/II/BOT/H/IV/17 (New)**

**2017**

**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*

**[ NEW SYLLABUS ]**

**GROUP – A**

**1. Answer any ten questions : 2 × 10**

**(a) Name the components of electron-transport system.**

**( Turn Over )**

- (b) What is meant by  $\beta$ -oxidation of fatty acids.
- (c) What is photorespiration ?
- (d) What is  $C_4$ -Cycle ?
- (e) What is Kranz Anatomy ?
- (f) Name two inhibitors of protein synthesis.
- (g) Write name of simplest amino acid. Draw chemical structure.
- (h) Distinguish between anomocytic and paracytic type of stomata.
- (i) What are meant by amphivasal and amphicribal vascular bundles ?
- (j) Establish the relationship :  $OP = TP - WP$ .
- (k) Distinguish between phellem and phalloderm.
- (l) Why the pH of succulent bases remain acidic during night ?
- (m) What is meant by salinity and temperature induced stress in plants ?

- (n) Mention the role of ABA in stomatal movement.
- (o) Distinguish between PUFA and MUFA.
- (p) What is first generation vaccines ? What are adjuvants ?

**GROUP -- B**

2. Answer any *five* questions : 8 × 5
- (a) Name major Xanthophyll pigments in plants.  
Explain Biosynthesis of carotenoids. 4 + 4
  - (b) What are the factors that affect transpiration ?  
Explain stomatal opening in succulent plants. Write two major significance of transpiration. 2 + 4 + 2
  - (c) Write the differences between  $P_r$  and  $P_{fr}$  forms of phytochrome. Discuss the role of phytochrome in flowering. What is CDL ? 2 + 5 + 1
  - (d) What is meant by primary structure of protein ? Discuss the  $\alpha$ -helix and  $\beta$ -pleated sheet forms of protein structure. 2 + 6

- (e) What is activation of amino acid ? Explain initiation of protein synthesis in prokaryotes. 2 + 6
- (f) Illustrate the chemical structure of cell-wall. Write the functions of cell wall. 6 + 2
- (g) Explain stomatal types with example found in Angiosperms. 8
- (h) Briefly describe the role of *Cryptomeria japonica* and *Panax ginseng* in human welfare. Write the role of mycorrhizae in sustainable agriculture. 6 + 2

GROUP – C

3. Answer any two of the following : 15 × 2
- (a) Explain anomalous secondary growth in : 5 + 5 + 5
- (i) *Boerhaavia* stem
- (ii) *Tinospora* root
- (iii) *Tecoma* stem.
- (b) (i) Discuss the role of algae as food.
- (ii) Describe source and dunction of protease.

( 5 )

- (iii) Explain the process of Krebs cycle in plants. 3 + 4 + 8
- (c) (i) Explain role of auxin in agriculture.
- (ii) Discuss modern approaches related to plant disease management.
- (iii) Explain normal secondary growth in dicot woods. 5 + 5 + 5
- (d) Write notes on : 5 + 5 + 5
- (i) Role of microorganism in curd and beer production
- (ii) Transcription in protein synthesis
- (iii) CAM cycle in Plants.
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