2021

BOTANY

Core - BOTA 301

[CBCS]

Full Marks : 40   Time : Two Hours

The figures in the margin indicate full marks.

INSTRUCTIONS TO THE STUDENTS

Answer should be brief and to-the-point; upper word limit of answer to be written for 01 mark question is 30 words, 02 marks question is 50 words, 03 marks question is 150 words, 05 marks question is 250 words and 10 marks is 500 words. The image of the answer script (must be numbered, either at the top or bottom of the answer sheet) should be clear and examinees must also follow the guidelines regarding the timeframe and other relevant instructions as informed to them by the authority concerned. Examinees should write their - Registration number & session, Roll & Number, Subject, Paper code legibly at the top of every page of their answer script.

Group - A

(Biochemistry)

1. Answer any *four* of the following :   1×4=4

    1.1 Define anaplerotic reactions. Give an example.

    1.2 What are the termini of a linear peptide? Why is it named so?

    1.3 What is substrate level phosphorylation? Give an example.

    1.4 What is 'BLAST'?

    1.5 What is torsion angle?

    1.6 Differentiate between protein and peptide.

2. Answer any *two* of the following : 3×2=6

   2.1 Who discovered photorespiration? State the significance of photorespiration in plants. 1+2

   2.2 Write a brief note on ATP synthase.

   2.3 Differentiate between Native –PAGE and SDS-PAGE.

   2.4 Briefly describe different external forces which control protein structure stability.

3. Answer any *one* of the following : 10×1=10

   3.1 Briefly describe the metabolic regulation of Kreb's cycle. State the significance of Glyoxylate cycle in plants. 7+3

   3.2 Define Ramachandran plot? Described the basic types of Ramachandran plot? What is van der Waals' contact distance? How does van der Waals' contact distance control the internal stability of the secondary structure in protein. 2+2+1+5

Group - B

(Pharmacognosy & Analytical Techniques)

4. Answer any *four* of the following : 1×4=4

   4.1. Name one alkaloidal drug and mention its application.

   4.2. What are volatile oils? Give example.

   4.3. What is antihypertensive drug, mention its scientific name and family?

   4.4. What are Pharmacopoeias?

   4.5. Define partition co-efficient.

   4.6. What is chromatogram?

5. Answer any *two* of the following : 3×2=6

   5.1. State briefly the bioassay guided fractionation.

   5.2. Write a brief note of different type resins and their applications.

5.3. Give an overview of the basic principles of chromatography.

5.4. Write a brief note on aromatherapy.

6. Answer any *one* of the following :   10×1=10

6.1. Give the classification of plant drugs based on their sources with examples.
                                                                    10

6.2. Write the anatomical features, active principles, and uses of *Catharanthus* sp. and *Holarrhena* sp.   (1+2+2)×2

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