Exam Code: 120601 Paper Code: 1188

Bachelor of Science (Biotechnology) Semester-I

Biochemistry-I

Course Code: BBTM-1083

Time – 3hrs **Marks – 50**

***Note*: Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section. Each Question carries Equal Marks. (10)**

Section A

1(a) Write the biological functions of water. (5)

(b) What is the buffer? Also mentioned the mechanisms of buffer solution. (5)

2(a) Derive the Henderson and Hasselbach equation. (5)

(b) Explain the physiochemical properties od water, how these support to life on earth (5)

Section B

3(a) Write in brief the classification of carbohydrates. (5)

(b) Write a short note on peptidoglycan (5)

4. (a) Mentioned five chemical reactions of carbohydrate/ glucose (5)

(b) What is the starch? Write its structure and significances. (5)

Section C

5(a) Write the biological functions of lipids. (5)

(b) Write the various functions of prostaglandins? (5)

6.(a) What are membrane lipids. Write the structures of two phospholipids (5)

(b) Write a short note on a cholesterol. (5)

Section D

7. (a) Write the name of five classes of amino acids. (5)

(b). Mentioned the various covalent and noncovalent bonds which established the protein structures (5)

8. Describe in brief about the various structural levels of proteins. (10)

Exam Code: 120601 Paper Code: 1189

Bachelor of Science (Bio-Technology)
Semester- I
Botany I
Course Code: BBTM – 1074

Time: 3 hrs **Maximum Marks:50**

Attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section. Each question carries ten marks.

Section A

1. Discuss the general characteristics of Pteridophytes.

2. Briefly discuss the affinities (similarities and differences) of Bryophytes with Algae.

Section B

3. Discuss briefly the internal structure of structure of root in dicots.

4. Discuss the secondary growth in stem of *Helianthus.*

Section C

5. What is pollination? Discuss its types and importance.

6. Write a detailed note on structure and development of anther and male gametophyte.

Section D

7. Discuss the classification of plants given by Bentham & Hooker. Give its merits and demerits.

8. Give the economic importance of family Cruciferae. Discuss its important genera *Brassica compestris.*

Exam Code: 120601 **Paper Code: 1190**

Bachelor of Science (Bio-Technology)
Semester-I
Course Title: General Microbiology-I
Course Code: BBTM-1345

Time Allowed: 3 Hours **Max Marks: 50**

Note: Attempt 5 questions, selecting at least one question from each section. The fifth question may be attempted from any section. Each question carries 10 marks.

Section-A

1. Describe the morphology and fine structure of bacteria.
2. Discuss the evolution of microbiology as a scientific discipline. Include key historical milestones and important discoveries that have shaped the field.

Section-B

3. What are the different types of bacterial flagella. Explain in detail.
4. Provide a general outline of bacterial classification and taxonomy based on Bergey's Manual of Determinative Bacteriology.

Section-C

5. Discuss the role of culture media in microbiology and the different types of media used for cultivating bacteria.
6. Provide an overview of physical and chemical methods of sterilization.

Section-D

7. Describe the working principle and application of dark field microscopy.
8. What are the principles of electron microscopy, and how do scanning electron microscopy (SEM) and transmission electron microscopy (TEM) differ?