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BSCMBCN 201

II Semester B.Sc. Examination, September 2022
(NEP – 2020) (2021-22 Batch Onwards)
MICROBIOLOGY
Microbial Biochemistry and Physiology (DSCC)

Time : 2 Hours

Max. Marks : 60

Note : Answer on **complete** set of questions from **each** Unit.
Draw diagrams **wherever** necessary.

UNIT – I

1. a) What is an acid ? Give an example. (2+5+8=15)
- b) Explain the covalent and non-covalent bond with examples to each.
- c) Discuss the properties of water.

OR

2. a) Mention the primary characteristics of carbon. (2+5+8=15)
- b) Explain the structure of water and justify 'Water is an universal solvent'.
- c) Comment on the pH. Add a note on Hunderson-Hasselbalch equation.

UNIT – II

3. a) What are the functions of haemoglobin ? (2+5+8=15)
- b) Write a note on classification of lipids.
- c) Describe the secondary structural organization of proteins.

OR

4. a) What are non-essential amino acids ? Give any two examples. (2+5+8=15)
- b) Define and classify the vitamins.
- c) Explain any four properties of carbohydrates.

P.T.O.



UNIT – III

5. a) What are macronutrients ? Give any two examples. **(2+5+8=15)**
b) How are the microorganisms classified based on nutritional requirements ?
c) What is generation time ? Describe the bacterial growth curve.

OR

6. a) Write a short note on DMC. **(2+5+8=15)**
b) Explain the effect of pH on microbial growth.
c) What is viable count ? Describe serial dilution agar plating technique in detail.

UNIT – IV

7. a) What are the exothermic and endothermic reactions ? **(2+5+8=15)**
b) What are the components of ETC ?
c) Describe the mechanism of oxygenic bacterial photosynthesis.

OR

8. a) What are high energy compounds ? Give examples. **(2+5+8=15)**
b) Differentiate between homolactate and heterolactate fermentations.
c) Explain glycolytic pathway in detail.
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