

[4]

Or

Explain the hydrogen Metabolism process.

3. Briefly describe the electron transport in sulphate and nitrate reducer Microorganism.

Or

Give a detail account of transport across nutrient.

4. What is Biological Nitrogen fixation ? Explain the symbiotic Nitrogen fixation.

Or

Describe the Biotransformation of steroid.

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G-3/335/21

Roll No.....

III Semester Examination, April-2021

M.Sc.

MICROBIOLOGY

Paper I

(Microbial Physiology)

Time : 3 Hours]

[Maximum Marks : 80

Note : All questions are compulsory. Question Paper comprises of 3 sections. **Section A** is objective type/Multiple Choice questions with no internal choice. **Section B** is short answer type with internal choice. **Section C** is long answer type with internal choice.

SECTION 'A'

(Objective Type Questions)

Choose the correct answer :

1 × 8 = 8

1. Classification of organism as oxygenic and anoxygenic during photosynthesis is based on :
 - (a) The presence of CO₂
 - (b) The generation of oxygen
 - (c) The presence of light
 - (d) The presence of water
2. The region in which bacteriochlorophyll can absorb light is :
 - (a) Ultraviolet region
 - (b) Infrared region
 - (c) Visible region
 - (d) Microwave region
3. Which of the following is a common nitrogen acceptor for all reactions involving transaminase :
 - (a) α ketoglutarate
 - (b) Pyruvate
 - (c) Oxaloacetate
 - (d) Acetoacetate

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4. Peptidoglycan is made up of :

- (a) N-acetyl glucosamine
- (b) N-acetyl muramic acid
- (c) N-acetyl glucosamine, N-acetyl muramic acid
- (d) N-acetyl glucosamine, N-acetyl muramic acid amino acid

5. Active transport of a substance across a membrane require :

- (a) A gradient (b) The expenditure of ATP
- (c) Water (d) diffusion

6. The type of fermentation observed in yeast :

- (a) Acrylic fermentation
- (b) Lactic acid fermentation
- (c) Pyruvic fermentation
- (d) Alcohol fermentation

7. Conversion of Nitrogen to ammonia or nitrogenous compound is termed as :

- (a) Nitrogen fixation (b) Nitrification
- (c) Denitrification (d) Nitrogen assimilation

8. Which of the following group contain many unique co-enzyme such as co-enzyme M and Co-enzyme F₄₂₀ ?

- (a) Sulphate reducing Bacteria
- (b) Methanotrophs
- (c) Methanogenesis
- (d) Acetogens

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SECTION 'B'

6 × 4 = 24

(Short Answer Type Questions)

Note : Answer the following questions in 250 words.

1. Explain the Calvin cycle.

Or

Write note on photosynthetic process in cyanobacteria.

2. Write a short note on Biosynthesis of peptidoglycon.

Or

Explain the degradation of polycyclic aeromatic hydrocarbon.

3. Describe the Lactic Acid Fermentation.

Or

Explain the methane oxidation process.

4. Write a note on Nitrogenase enzyme.

Or

Explain the Biochemical precEDURE for methane production.

SECTION 'C'

12 × 4 = 48

(Long Answer Type Questions)

Note : Answer the following questions in 500 words.

1. Give a detail account of photosynthetic pigment present in bacteria.

Or

Compare the Anoxygenic and oxygenic photosynthesis in Bacteria.

2. Write a note on Biosynthesis of proline and orginine.

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P.T.O.