

Roll No.....

Total No. of Unit : 04

Total No. of Printed Pages : 03

Code No. : 02/307

Second Semester Examination, May 2019

M.Sc. MICROBIOLOGY

Paper - III

MICROBIAL PHYSIOLOGY

Time : 3 Hrs.

Max. Marks : 80

- Part A and B of each question in each unit consist of very short answer type questions which are to be answered in one or two sentences.
Part C (Short answer type) of each question will be answered in 200-250 words.
Part D (Long answer type) of each question should be answered within the word limit 400-450.

Unit - I

Q.1 A. How is the relation between free energy, enthalpy and entropy is expressed? (2)

Q.1 B. What is the significance of number of chloroplasts in a cell? (2)

Q.1 C. What do you mean by uncouples? Point out the action of uncoupling agents by giving suitable examples. (4)

OR

Explain the role of CAMP regulating molecule.

Q.1 D. Explain the components and reactions of electron transport chain alongwith suitable figures. (12)

P.T.O.

(2)

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OR

Give a detail account of various photosynthetic pigments.

Unit - II

Q.2 A. Point out the features of oxygenic photosynthetic bacteria. (2)

Q.2 B. What do you mean by chemolithotrophic microorganisms? (2)

Q.2 C. What are the substrates for methanogenesis? Give an account of reactions involved and factors affecting methanogenesis. (4)

OR

Why C_3 plants are called as nonefficient plants? Explain.

Q.2 D. Why Calvin cycle is called as 'dark reaction'? Discuss the reaction involved in generation of carbohydrates from CO_2 and H_2O . (12)

OR

How do chemolithotrophs differ in mechanism of fusing CO_2 ? Explain by giving suitable examples.

Unit - III

Q.3 A. What is the location and significance of Glyoxylate pathway?(2)

Q.3 B. What is the location of gluconeogenesis? What are major substrates for gluconeogenesis? (2)

Q.3 C. Explain the role of vitamins in TCA cycle. (4)

OR

(3)

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What is Pasteur Effect?

Q.3 D. Point out the difference between oxidative and substrate level phosphorylation? Explain the role of enzymes in regulating the citric acid cycle. (12)

OR

Explain the steps involved and energetics of gluconeogenesis.

Unit - IV

Q.4 A. What is the purpose of oxidative deamination of amino acids? (2)

Q.4 B. What are polyamines? What is their clinical significance? (2)

Q.4 C. Point out the salient features of transamination. (4)

OR

What are the precursors for synthesis of polyamines? Explain the functions of polyamines.

Q.4 D. What are the basic units of peptidoglycan backbone? Explain the biosynthesis of peptidoglycan alongwith suitable flow chart. (12)

OR

Give an account of oxidative and non oxidative deamination. What are the functions of NH_3 formed in these reactions?

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