

K17U 1977



Reg. No. :

Name :

III Semester B.Sc. Degree (CBCSS – Reg./Sup./Imp.)

Examination, November 2017

(2014 Admn. Onwards)

CORE COURSE IN MICROBIOLOGY

3B03 MCB : Microbial Physiology

Time : 3 Hours

Max. Marks : 40

Instruction : Draw diagrams wherever necessary.

SECTION – A

Answer all questions. Each question carries 1 mark.

1. Acetogens reduce CO_2 to acetate by using _____ pathway.
2. The process in which inhibition of dinitrogenase activity occurs in presence of excess NH_3 is called _____
3. Piezophiles are prokaryotes growing optimally in high _____
4. Functionally distinct sulfide and thiosulfate oxidation system present in sulfur bacteria is called _____ (4×1=4)

SECTION – B

Answer very briefly on any seven of the following. Each question carries 2 marks.

5. Mixotroph
6. Monooxygenase
7. Synchronous growth
8. Phycobilisome
9. Chemolithotroph
10. Facultative anaerobe
11. Anaerobic respiration
12. Rubisco
13. Azotobacter
14. Hydrogen oxidizing bacteria.

(7×2=14)

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SECTION - C

Answer **any four** of the following. **Each** question carries **3** marks.

15. Nutritional classification of bacteria.
16. Halophiles.
17. Dissimilative nitrate reduction
18. Bacterial growth curve.
19. Methanogenesis.
20. Cyclic photophosphorylation.

(4x3=12)

SECTION - D

Answer **any two** of the following. **Each** question carries **5** marks.

21. What are the major factors influencing microbial growth? Describe the molecular adaptations in thermophilic bacteria.
22. Briefly describe the binary fission in bacteria. Write a note on the methods used to quantitate microbial growth.
23. Describe the structure of nitrogenase. Discuss the steps involved in nitrogen fixation.
24. Write a note on nutritional requirements of bacteria. What are the common ingredients used in culture media to fulfill the nutritional requirements of microorganisms?

(2x5=10)