Reg. No. : ....

Name : ....

III Semester B.Sc. Degree (CCSS – 2014 Admn. – Regular)
Examination, November 2015
CORE COURSE IN MICROBIOLOGY
3B03 MCB : Microbial Physiology

Time : 3 Hours   Max. Marks : 40

Instructions : *Draw* diagrams *wherever* necessary.

SECTION – A

Answer **all** questions. **Each** carries **1** mark.

1. The microorganisms which grow at extreme environmental conditions are called as ___Extremophiles / archaebacteria___

2. The composition of Iron-Molybdenum cofactor in nitrogenase is _____

3. The organisms that can grow using carbon compounds that lack C – C bonds are called ___Autotrophs___

4. <u>Paracoccus</u> <u>denitrificans</u> can oxidize _____NO_3^-_____ anaerobically.   (4×1=4)

SECTION – B

Answer **any seven** of the following. **Each** carries **2 marks**.

5. Auxotroph

6. Generation time

7. Heterocysts

8. Superoxide dismutase

9. Synchronous growth

10. Piezophiles

11. Non-cyclic photophosphorylation

12. Methanogens

13. Rubisco

14. Anammox.   **(7×2=14)**

SECTION – C

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

Write short notes on :

15. Anoxic aromatic hydrocarbon oxidation.

16. Calvin cycle.

17. Acetogenesis.

18. Symbiotic nitrogen fixation.

19. Effect of temperature on bacterial growth.

20. Continuous culture.   **(4×3=12)**

SECTION – D

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

21. Discuss nutritional requirements of microorganism. Write a note on various agents used in culture media to fulfil nutritional requirements of microorganisms.

22. Describe binary fission in prokaryotic cells. What are the methods used for measuring bacterial growth.

23. What are the electron donors utilized by chemolithotrophic organisms ? Describe the oxidation of sulfur compounds by sulfur bacteria.

24. Write a note on photosynthetic pigments present in microorganisms. Describe the photosynthetic electron flow in purple bacteria.   **(2×5=10)**

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