

III Semester B.Sc. Examination, Nov./Dec. 2016
(Semester Scheme) (CBCS – F/R)
MICROBIOLOGY – III
Microbial Physiology and Microbial Genetics

Time : 3 Hours

Max. Marks : 70

- Instructions :**
- 1) Candidates of 2011 Onwards should answer **all** the Sections.
 - 2) Candidates Prior to 2011 should answer **A, B and C** should only.
 - 3) **Draw diagrams wherever necessary.**
 - 4) **70 marks** for students of 2011-12 and Onwards/CBCS (Credit Based Semester Scheme).
 - 5) **60 marks** for repeater students Prior to 2011-12.

SECTION – A

I. Write brief notes on the following :

(5×2=10)

- 1) Peptide and glycosidic bond
- 2) Nucleoid
- 3) Sulphur oxidizing bacteria
- 4) Allosteric enzymes
- 5) Histones.

SECTION – B

II. Answer **any four** of the following :

(4×5=20)

- 6) Describe the structure of the double helix briefly.
- 7) Explain the light reaction in purple bacteria.
- 8) Substrate level phosphorylation.
- 9) Define free energy ? Add a note on high energy compounds.
- 10) Give the structure and biological functions of ATP.



SECTION – C

III. Answer any three of the following :

(3×10=30)

- 11) Describe the EMP pathway. How does it differ from HMP pathway ?
- 12) Describe the various enzymes involved in DNA replication of prokaryotes.
- 13) What is genetic recombination ? Discuss conjugation as recombination process.
- 14) What are enzymes ? Add a note on its classification and nomenclature.
- 15) What is fermentation ? Explain homo and heterolactic fermentation.

SECTION – D

IV. Answer the following in one sentence :

(10×1=10)

- 16) Transition
 - 17) F-factor
 - 18) Lipids
 - 19) Photophosphorylation
 - 20) Carotenoids
 - 21) Topoisomerases
 - 22) Reduction potential
 - 23) Ionizing radiation
 - 24) Holoenzyme
 - 25) Okazaki fragment.
-

BMSCW