

Seat No. : \_\_\_\_\_

# MU-112

March-2019

B.Sc., Sem.-IV

## CC-204 : Microbiology (Diversity of Bacteria)

Time : 2:30 Hours]

[Max. Marks : 70

- Instructions :**
- (1) Draw figures wherever necessary.
  - (2) Mention correct question number against each answer.
  - (3) Figures to the right indicate marks.

1. (A) Describe the salient features of thermophillic sulphur metabolizing archaea and explain their evolutionary relationship. 14

**OR**

- (i) Discuss the salient features of halophiles. 7
  - (ii) Explain the structure of ribosome and its role in evolutionary study. 7
- (B) Answers in **1 – 2** lines only. (any **four**) 4
- (i) What is phylogeny ?
  - (ii) Define species.
  - (iii) What is the cell wall composition of archaea ?
  - (iv) Define photoautotrophs.
  - (v) Give an example of methanogen.
  - (vi) Define the term Biodiversity.

2. (A) Explain the features of anoxygenic photosynthetic bacteria. 14

**OR**

- (i) Elaborate the general properties of cyanobacteria. 7
- (ii) Discuss the properties of *Nitrobacter* sps. 7

- (B) Answers in **1-2** lines only. (any **four**) **4**
- (i) Which are the inorganic substrates oxidized by thiobacilli ?
  - (ii) Give an example of magnetotactic bacteria.
  - (iii) Give an example of colorless sulphur bacteria.
  - (iv) What is the major role of *Hydrogenobacter* sps. ?
  - (v) Give unique feature of *Siderococcus* sps.
  - (vi) What is the major role of *Nitrosomonas* sps. ?
3. (A) Describe the characteristics and diversity of family *Enterobacteriaceae*. **14**
- OR**
- (i) Write a note on Mollicutes. **7**
  - (ii) Describe the characteristics of *Spirochetes*. **7**
- (B) Answers in **1-2** lines only. (any **three**) **3**
- (i) What is the unique feature of *Chlamydia* regarding their reproductive cycle ?
  - (ii) Give an example of gram negative curved rods.
  - (iii) What is the mutualistic form of *Rickettsia* called ?
  - (iv) Give an example of pigment producing gram negative bacteria.
  - (v) Give an example of luminescent bacteria.
4. (A) Explain the general characteristics of gram positive irregular rods. **14**
- OR**
- (i) Differentiate between *Streptococcus* and *Staphylococcus*. **7**
  - (ii) Discuss the characteristics of *Actinomycetes*. **7**
- (B) Answers in **1-2** lines only. (any **three**) **3**
- (i) Define trichomes.
  - (ii) What is a fruiting body ?
  - (iii) What are *Actinoplanetes* ?
  - (iv) Give the unique feature of *Nocardia* sps.
  - (v) Give an example of non-photosynthetic non-fruiting gliding bacteria.