

Seat No. : _____

AW-104

May-2016

B.Sc., Sem.-II

CC-103 : Microbiology

(Basic Bacteriology)

Time : 3 Hours]

[Max. Marks : 70

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

1. Answer the following : (any **two**) **14**
 - (a) Draw various shapes of bacterial cell and explain patterns of its arrangement.
 - (b) Explain 'fluid mosaic model' of cytoplasmic membrane.
 - (c) Draw and differentiate cell wall of gram positive and gram negative bacteria.
 - (d) What is endospore ? Explain the process of sporulation in bacteria.

2. Answer the following : (any **two**) **14**
 - (a) Describe nutritional diversity in bacteria based on source of electron and energy.
 - (b) Enlist and explain nutritional requirements of bacteria.
 - (c) Explain principles of media formulation and give brief list of media ingredients.
 - (d) What is bacterial colony ? Describe colony characteristics of bacteria.

3. Answer the following : (any **two**) **14**
 - (a) Describe general principles (mechanisms) of microbial control.
 - (b) Describe the use of Ultraviolet rays, X-rays and Gamma rays for microbial control.
 - (c) Enlist characteristics of an ideal antimicrobial agent.
 - (d) Write note on gaseous sterilization.

4. Answer the following : (any **two**) **14**
 - (a) Explain principles of binomial system of nomenclature of bacteria.
 - (b) Draw and describe : Wittaker's five kingdom system of classification.
 - (c) Explain three domains system of classification proposed by Carl Woese.
 - (d) Write a brief note on Bergey's Manual of Systematic Bacteriology.

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5. Answer briefly in **one** or **two** lines only :

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- (1) What are pleomorphic bacteria ?
 - (2) What are mesosomes ?
 - (3) How many chromosomes are there in *E. coli* cell ?
 - (4) What is the role of dipicolinic acid in bacterial endospore ?
 - (5) Define : Autotrophs
 - (6) Define : Chemolithotrophs
 - (7) What are facultative anaerobes ?
 - (8) Give one example of enriched medium.
 - (9) Define : Sterilization
 - (10) Name one disinfectant chemical, routinely used in the microbiology laboratory.
 - (11) Name one heavy metal used for microbial control.
 - (12) Define : Taxonomy
 - (13) Define : Species
 - (14) What is 16S rRNA ?
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