

F.Y.B.SC. SEM – II (CBCS - 2016 COURSE) : SUMMER - 2018

SUBJECT: Microbiology: Microbial Nutrition, Growth & Control

Day : **Monday**
Date : **16/04/2018**

S-2018-0635

Time: **03.00 PM TO 06.00 PM**
Max Marks: 60

N.B

- 1) All questions are **COMPULSORY**.
- 2) Figures to the **RIGHT** indicate full marks.
- 3) Draw neat labeled diagrams **WHEREVER** necessary.

Q.1 A) Attempt all the following: (MCQ) (06)

- a) Chemoautotrophs can survive on
 - i) Minerals
 - ii) CO₂
 - iii) Minerals and CO₂
 - iv) Methane
- b) Superoxide ion is toxic to strict anaerobes because they lack
 - i) Catalase
 - ii) Peroxidase
 - iii) Dismutase
 - iv) Oxidase
- c) In a viable plate count, each ----- represents a ----- form the sample population
 - i) Cell, colony
 - ii) Colony, cell
 - iii) Hour, generation
 - iv) Cell, generation
- d) Any process that destroys the nonsporeforming contaminants on inanimate objects is
 - i) Antisepsis
 - ii) Disinfection
 - iii) Sterilization
 - iv) Degerming
- e) An example of an agent that lowers the surface tension of cells is -----
 - i) Phenol
 - ii) Chlorine
 - iii) Alcohol
 - iv) Formalin
- f) Ionizing radiation removes ----- from atoms
 - i) Protons
 - ii) Waves
 - iii) Electrons
 - iv) Ions

B) Define all the following: (06)

- i) Differential media
- ii) Generation time
- iii) Psychrophiles
- iv) Strict aerobe
- v) Fungicide
- vi) Agar overlay method

- Q.2** Attempt any **THREE** of the following: (12)
- a) Name different vitamins and give their role in microbial nutrition.
 - b) How is desiccation and osmotic pressure useful in controlling microbial growth?
 - c) What are complex media?
 - d) Name and describe different phases of microbial growth.
- Q.3** Attempt any **FOUR** of the following: (12)
- a) Describe transport media
 - b) What are thermophiles?
 - c) What is cryopreservation? Give its use in culture preservation?
 - d) What are the features of the anaerobic organisms?
 - e) Give the use of gaseous agents in controlling microbial growth.
- Q.4** Attempt any **TWO** of the following: (12)
- a) Differentiate between direct and indirect methods of measurement of microbial growth
 - b) Describe how disinfectants are evaluated?
 - c) How are microbes grouped based on their optimum pH required for growth?
- Q.5** Attempt any **TWO** of the following: (12)
- a) How is autoclave useful in sterilization? Describe in details
 - b) Describe the precautions you will take for safe working in Microbiology laboratory
 - c) Write in short on pour plate method as an enumeration technique.

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