

F.Y.B.SC. SEM – II (CBCS - 2016 Course) : SUMMER - 2019
SUBJECT: MICROBIOLOGY: MICROBIAL NUTRITION, GROTH & CONTROL

Day : Friday
Date : 12/04/2019

Time: 03.00 P.M. To 06.00 P.M
Max. Marks: 60

S-2019-0814

N. B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat diagram **WHEREVER** necessary.

Q.1 A) Answer the following: (06)

- a) Which of the following cannot be used to sterilize a heat-labile solution stored in a plastic container?
 - i) gamma radiation
 - ii) ethylene oxide
 - iii) nonionizing radiation
 - iv) autoclaving
- b) Which of the following is not a characteristic of quaternary ammonium compounds?
 - i) bactericidal against gram-positive bacteria
 - ii) sporicidal
 - iii) amoebicidal
 - iv) fungicidal
- c) A classmate is trying to determine how a disinfectant might kill cells. You observed that when he spilled the disinfectant in your reduced litmus milk, the litmus turned blue again. You suggest to your classmate that
 - i) the disinfectant might inhibit cell wall synthesis.
 - ii) the disinfectant might oxidize molecules.
 - iii) the disinfectant might inhibit protein synthesis.
 - iv) the disinfectant might denature proteins.
- d) Assume you inoculated 100 facultatively anaerobic cells onto nutrient agar and incubated the plate aerobically. You then inoculated 100 cells of the same species onto nutrient agar and incubated the second plate anaerobically. After incubation for 24 hours, you should have
 - i) more colonies on the aerobic plate.
 - ii) more colonies on the anaerobic plate.
 - iii) the same number of colonies on both plates.
 - iv) no colonies on any plate.
- e) The term trace elements refers to
 - i) the elements CHONPS.
 - ii) vitamins.
 - iii) nitrogen, phosphorus and sulfur.
 - iv) small mineral requirements.
- f) Which one of the following temperatures would most likely kill a mesophile?
 - i) -50°C
 - ii) 9°C
 - iii) 60°C
 - iv) 0°C

B) Define: (06)

- i) Log phase
- ii) MPN
- iii) Peroxidase
- iv) Obligate anaerobes
- v) Bacteriostatic
- vi) Degerming

P.T.O.

- Q.2** Attempt **ANY THREE** of the following: (12)
- a) What is the effect of temperature on bacterial growth?
 - b) With the help of suitable examples explain selective media.
 - c) What are non culturable bacteria? Why are they studied?
 - d) Explain the process and use of Pasteurization.

- Q.3** Attempt **ANY FOUR** of the following: (12)
- a) What is TDP? Give its importance.
 - b) What is the importance of preservation at ultra low temperatures?
 - c) Explain spread plate method for isolation of bacteria.
 - d) Enlist different growth factors with their functions as used in culture media.
 - e) Write in short on uptake of nutrients by microbial cells by the process of diffusion.

- Q.4** Answer the following: (12)
- a) Enlist physical agents used in control of microbial growth? Describe the use of filters in the control of microbial growth.
 - b) Enlist indirect methods of estimation of microbial growth. Describe any two.
 - c) How are bacteria grouped on the basis of their oxygen requirement?

- Q.5** Answer the following: (12)
- a) How are halogens effective in control of microbial growth?
 - b) How are disinfectants evaluated?
 - c) Describe natural and synthetic media.

* * * * *