

CARMEL COLLEGE OF ARTS, SCIENCE AND COMMERCE, NUVEM – GOA
POST GRADUATE DEGREE STUDIES (AFFILIATED TO GOA UNIVERSITY)

M.Sc. (I) Food Technology (Semester I) Examination, February 2022

FTC 102: FOOD MICROBIOLOGY AND FOOD SAFETY STANDARDS

Max. Marks: 45

Duration: 2 hours

Date: / / 2022

INSTRUCTIONS:

1. Section I is compulsory.
2. Answer **any 3** questions from Section II.
3. Figures on the right indicate maximum marks allotted to the question.

SECTION I

- Q1. Justify the following in brief. **(5 x 2 = 10 marks)**
- a. Probiotics contribute to the health of an individual.
 - b. Raw fish stored at room temperature for several hours produces a foul smell.
 - c. In a bacterial growth study, after a rapid exponential phase, bacteria enter into a long stationary phase before death.
 - d. Wine is termed as a '*fermented beverage*'.
 - e. Gene probes are used for rapid detection of microorganisms in food.
- Q2. Elaborate on the different methods of sterilization and disinfection used in Food microbiology. **5 marks**

SECTION II

- Q3. Briefly explain the following: **10 marks**
- a. Any two Intrinsic factors affecting microbial growth.
 - b. Microorganisms involved in the spoilage of milk.

Q4. Comment on the principle, working and application of the following techniques in food quality analysis: **10 marks**

- a. Affinity chromatography
- b. UV and Visible spectroscopy

Q5. Do as directed: **10 marks**

- a. Discuss the symptoms, pathogenesis and preventive measures of Salmonellosis.
- b. Highlight the Good Agricultural Practices that contribute to animal health and welfare.

Q6. With the help of a neat and labelled diagram, explain the design of a bioreactor. **10 marks**

Concisely differentiate between an Airlift bioreactor and a Packed bed bioreactor.
