

CARMEL COLLEGE OF ARTS, SCIENCE AND COMMERCE, NUVEM – GOA

POST GRADUATE DEGREE STUDIES (AFFILIATED TO GOA UNIVERSITY)

M.Sc. (II) Food Technology (Semester III) Examination February 2022

FTC 205 LAB IN FOOD BIOTECHNOLOGY AND INDUSTRIAL WASTE MANAGEMENT

Max. Marks: 30

Duration: 4 hours

Date: / /2022

INSTRUCTIONS:

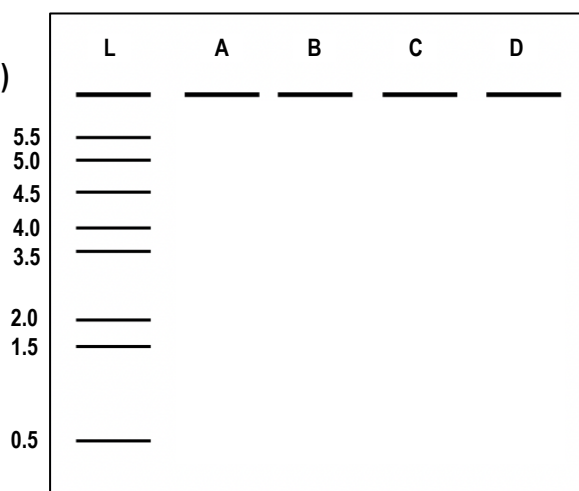
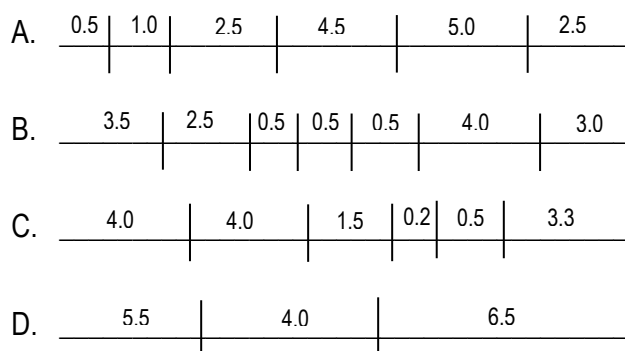
1. All questions are compulsory.
2. Figures on the right indicate maximum marks assigned to the question

Q1. Four strains of bacteria (devoid of plasmid) were digested with EcoRI restriction enzyme and loaded on the gel. Based on the provided GelDoc, answer the following questions: (5 marks)

- a. What is Gel Electrophoresis?
- b. What samples are commonly run on an agarose gel?
- c. If one were to connect the anode and cathode cables incorrectly, how would the experiment be affected?
- d. Which of the samples contain the shortest DNA fragments? Justify your answer.
- e. Which of the bacterial strains are more similar in genetic orientation? Provide a suitable reason.



Q2. Four plasmids were mapped for restriction sites. Plot the bands on the figure accurately. (4 marks)



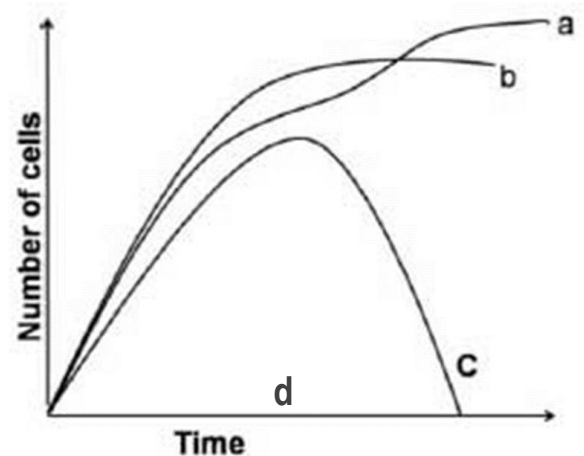
Q3. Discuss the principle behind pectin extraction from fruits.

(2 marks)

Q4. Four bacterial cultures were tested for its capacity to biodegrade the pesticide Carbofuran. The following curve was obtained. (4 marks)

The following statements are facts:

- A. Some bacterial strains can process it completely and utilize the breakdown metabolites as sources of energy
- B. Some bacterial strains need to work in conjunction with other bacterial strains to degrade effectively
- C. Some bacterial strains are susceptible to the toxin and therefore die off
- D. Some bacterial strains can process the compounds with no effect on its growth phases
- E. Some bacterial strains can carry out one part of the breakdown reaction, but are susceptible to the intermediate breakdown products



On analyzing the graphs, describe which fact pertains to which curve.

Q5. Spots (10 marks)

Q6. Viva (3 marks)

Q7. Journal (2 marks)

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