

**M.TECH. FOOD TECHNOLOGY AND BIO-CHEMICAL ENGINEERING 1st YEAR,
2ND SEMESTER EXAMINATION-2018**

ADVANCED FOOD BIOTECHNOLOGY

Part-I

(60 Marks for Part-I)

(Use a separate answer script for each group)

Time: 3 hrs

Full Marks: 100

GROUP-A

Answer any two

10×2 = 20

1. Write the factors on which perishability of fruits and vegetables depend.
2. What are the biotechnological processes which improves the quality of fruit and vegetables? Write the advantages one of such process.
3. What are the characteristics of probiotics? Briefly describe the classification of bacteriocin.

GROUP-B

Answer any two

20×2 = 40

4. (a) What are the advantages of prebiotic?
(b) Write the flowchart for COS production.
© What are the rate controlling parameters of FOS production.
(d) Write some applications of COS in food product development. 4+4+8+4 = 20
5. (a) What are the advantages of biological fortification over conventional fortification?
(b) Give some example of biologically fortified foods.
© How do you perform quality analysis of biologically improved foods? 6+8+6 = 20
- 6.(a) Define the term nutraceutical. What are the different natural sources of nutraceuticals?
Write their health promoting nature.
(b) Why fermentative production of nutraceuticals are advantageous than conventional production process?
© Briefly describe the fermentative production of nutraceuticals. 8(2+3+3)+4+8 = 20

MASTER OF TECHNOLOGY (F.T.B.E) EXAMINATION, 2018

(1st Year -2nd Semester)**Advanced Food Biotechnology**

Time: 3 hrs.

Full Marks : 100

Part – II (Full marks 40)

- A. Answer any three of the following Q1, Q2 ,Q3 & Q4 : (10 x 3 = 30)
1. (a) With the help of flow chart show the manufacturing steps of beer production.
 - (b) Find some enzyme applications in brewing industry.
 - (c) Write some intrinsic traits which may be considered as the parameters towards improvement of quality of wine production
 - (d) How can you make alcoholic drinks 'low calorie'? (3+2+2+3)
 2. (a) Name one organism which produces lactic acid in single isomeric form (D or L) .
 - (b) Mention the beneficial effects claimed for lactic acid bacteria.
 - (c) Name the factors which actually contribute to the inhibitory activity of a fermented food product.
 - (d) Show how can you produce high DE syrup from corn starch
 - (e) Name one enzyme and its objective of use in fruit juice processing. (1+2+2+4+1)
 3. (a) Write the difference between acid curd and enzymatic curd
 - (b) With the help of a flow chart show the steps Cheese production.
 - (c) Name two enzymes, their sources and types of cheese in which they are used.
 - (d) What do you understand by 'rennet substitute'? (2+3+2+3)
 4. (a) Name two organisms and their functions in cheese production.
 - (b) Show with example how biotechnology can help you to develop better quality strains for application in breweries
 - (c) Compare the process steps for the production of red and white wine (3+4+3)
- B. Answer any one of the following Q5, Q6 : (10 x 1 = 10)
5. (a) Write the differences between bacteriocin and therapeutic antibiotic.
 - (b) Compare two bacteriocins with reference to the following points:
Producing organism, mode of action, stability and antimicrobial spectrum (4+6)
 6. (a) What are the beneficial effects claimed for prebiotics ?
 - (b) Mention the characteristics of probiotics.
 - (c) Write the basic principles to be followed during screening of probiotic organisms.
 - (d) Give two examples of each of prebiotics and probiotic dairy product.
 - (e) Dairy product seems to be desired probiotic delivery vehicle – explain (2+2+2+2+2)