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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (Bio Technology) (Sem.-7)
FOOD & NUTRACEUTICAL BIOTECHNOLOGY
Subject Code : BTBT-704
M.Code : 71846

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

SECTION-A**1. Answer briefly :**

- a) Define Gene and its importance in Nutrigenomics.
- b) Explain transporter gene polymorphism.
- c) Define Gut Microbes, name them and their importance.
- d) Define Anabolic and catabolic enzymatic reactions with examples.
- e) Define Rancidity, antioxidants and name all the antioxidants used in foods with name of the product.
- f) Define food pigments and classify them with examples.
- g) Define Water Soluble vitamins and name all the scientific names of water soluble vitamins with their symbols.
- h) Explain the preservative action of fermentation using an example.
- i) Explain the role of yeast in bread making.
- j) Differentiate between leavening and fermentation.

SECTION-B

2. Define nutraceuticals and classify them on the basis of their chemical nature.
3. Explain the production of any pigment via micro-organism.
4. Differentiate between Class I and Class II type preservatives.
5. A suspension of bacterial spores containing 160000 spores per ml is heated at 110°C. The number of survivors is determined in samples withdrawn every 10 minutes. The results are:

Heating time	N, survivors per ml
0	160000
10	25000
20	8000
30	1600
40	200

6. For the flash sterilization of milk, a thermal treatment of 2 seconds at 131°C is recommended. Calculate the F₀ value of the process.

SECTION-C

7. Explain the growth curve in micro-organisms and different factors affecting their growth.
8. Explain the production of Acetic Acid from sugar bagass.
9. Differentiate Algal Proteins and SCP.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.