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B.Tech.(BT) (2011 Onwards) (Sem.-7,8)
FOOD & NUTRACEUTICAL BIOTECHNOLOGY
Subject Code : BTBT-704
Paper ID : [A2948]

Max. Marks : 60

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 has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

Q1. Write briefly :

- A. Write the principles of preservation with examples of each treatment.
- B. Explain the synergistic effect of pH and temperature for the growth of micro-organisms.
- C. Define water activity and give the values and its importance in bacteria, yeast and moulds.
- D. Define food and a nutraceutical and their difference as a role in remedy.
- E. Define the oxidants and anti-oxidants with their classification and examples.
- F. Define chemoprevention and how nutraceuticals plays a role in it.
- G. Define Class I and Class II food additives with examples.
- H. Define Transporter gene polymorphism and its importance in nutrigenomics.
- I. How nutrigenomics interact with micro-nutrients in humans using an example?
- J. Define gut bacteria and different terms related used in nutraceuticals.

SECTION-B

- Q2. Calculate the F_0 value, if D-value at 121°C is 1.5min, the initial population of microorganism was 10^6 and after sterilization cycle remain.
- Q3. Explain the factors required for the growth of micro-organisms.
- Q4. Explain the role of protein foods, SCP, Mushroom, yeast/algal proteins as remedy to disease mentioning the component they contain and source from they are derived.
- Q5. Explain the enzymatic starch and sugar conversion process with mentioning requisites.
- Q6. Calculate the water activity of 50 percent sucrose solution.

SECTION-C

- Q7. Write in detail the production of cheese using protease enzyme mentioning the pH and temperature using a flow chart.
- Q8. Explain the use of natural and synthetic enzymes in food industry.
- Q9. Explain the production of colours and flavours using micro-organisms.