

Dr Gungun

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

T-2 EXAMINATION-2016

B.Tech (Biotechnology) VI Semester

COURSE CODE: 10B11BT612

MAX. TIME: 1.5 Hours

COURSE NAME: Food and Agricultural Biotechnology

MAX. MARKS: 25

COURSE CREDITS: 4

*Note: All questions are compulsory.*

- Q1. Write a short note on importance of somatic cell genetics in agricultural biotechnology. Mention any three examples of plant varieties developed using such techniques. (3)
- Q2. Explain the process of T-DNA processing and transfer to plant cells highlighting the role of bacterial chromosomal and virulence region genes of Ti plasmid. (3)
- Q3. What are unique feature of a) Intermediate vector, b) Ti helper plasmid (2)
- Q4. a) How pulsed electric field is being used as a method of food preservation. Explain the advantages and disadvantages associated with the technique. (2)
- b) Describe the different methods used to preserve the food by cold sterilisation (2)
- Q5. What is Single Cell Protein (SCP)? Differentiate between different microbial groups used for the production of SCP. (2)
- Q6. For yoghurt preparation, you are provided with the ingredients: Milk (1 Ltr), Skimmed milk Powder, and starter cultures, answer the following:
- a) Steps involved in yoghurt preparation
- b) Description of starters and their role
- c) Identify the critical control points (CCPs) for the whole process.
- d) Suggest different strategies to work out for identified CCPs (4)
- Q7. For packaging of Mozzarella cheese and sliced mango, answer the following:
- a) Identify a suitable packaging material and justify the reason for selection
- b) Explain the suitability of packaging material in terms of distribution of the product and its management as waste (2)
- Q8. For preparation of cheese answer the following:
- a) Mode of action of rennet
- b) Metabolic processes during ripening (1+2)
- Q9. Although milk is considered as highly perishable food, still there are various natural antimicrobial systems available in milk. What are the those components, elaborate any one in detail with its mode of action (2)