

Time: 2^{1/2} Hrs

Total marks: 75

- NB: (1) Attempt all questions
- (2) All questions carry equal marks
- (3) Draw neat label diagram wherever necessary
- (4) For Q2,Q3,Q4 attempt A&B OR C&D

Q1. Do as directed (any 15)

(15)

A) Fill in the blanks:

- i. Plant-incorporated protectants (added genetic material), produces a pesticidal substance by plants are termed as.....
- ii. A segment of DNA that encodes protein is termed as
- iii. FDA stands for
- iv. Human gene encoding insulin has been transferred by.....technology and expressed in *E.coli* for management of diabetes.
- v.application for the sterilization of food items is an example of cold sterilization.
- vi. FAO stands forwhich is involved in setting standards containing requirements for food products.

B) Give one example of each:

- vii. Microorganisms used as biofertilizers
- viii. Transgenic livestock
- ix. Microbial insecticide
- x. Viral resistant transgenic plant
- xi. Edible Vaccine
- xii. First generation BT Cotton
- xiii. Transgene: modification in nutrient quality
- xiv. Plantbodies
- xv. Organism used in Beer fermentation
- xvi. Method used in citric acid production
- xvii. Agroinfection

C) State true or false:

- xviii. ICAR situated in New Delhi stands for Indian Cultural Association for Recombinant DNA Technology.

D) Explain the following terms:

- xix. Microbial fermentation
- xix. Rheology of food
- xx. Synbio

Q2A) Define biotechnology & describe about traditional biotechnology in detail.

(08)

Q2B) Write a note on biotechnology in developing world.

(07)

OR

Q2C) Write a note on biotechnology applied to the pharmaceutical, medical & healthcare.

(08)

Q2D) Discuss about biotech policies & initiative taken up by the government. (07)

Q3A) Write in detail about BT brinjal, its production method and advantage. (08)

Q3B) What is molecular farming, describe molecular farming of antibodies (07)

OR

Q3C) Define intellectual property right & its protection. Give its merits and demerits. (08)

Q3D) Write a note on breeding of transgenic livestock and give its advantages. (07)

Q4A) Elaborate on any four applications of biotechnology in food industry. (08)

Q4B) Discuss about the use of low temperature in preservation of food. (07)

OR

Q4C) Write an account on how food is preserved by chemical methods. (08)

Q4D) Write on the Hazard analysis and critical control points as regulatory aspects in maintenance of quality of food. (07)

Q5 Write short notes on (any 3) (15)

- Modern biotechnology
- Advantage of edible vaccines
- Surface fermentation
- Applications of transgenic plants
- Preservation using U.V. radiations