

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
MSc DEGREE EXAMINATION MAY 2022
(Second Semester)

Branch – FOODS AND NUTRITION

DISCIPLINE SPECIFIC ELECTIVE -I: BIOTECHNOLOGY

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (5 x 1 = 5)

1. Identify the optimum pH of the medium in fermentation process.
a) 7-9
b) 6-8
c) 4-5
d) 5-7
2. Which of the following does not have the property of production of secondary metabolites?
a) Filamentous Fungi
b) Filamentous Bacteria
c) Sporing Bacteria
d) Enterobacteria
3. The bacterial enzymes that can split or cut DNA at specific site.
a) Restriction endonuclease
b) Polymerase
c) Catalase
d) Ligase
4. Name the polymer used in enzyme entrapment or immobilization?
a) Tobacco Mosaic Virus
b) Bean yellow dwarf virus
c) Cabbage leaf curl virus
d) Wheat dwarf virus
5. Find the coat protein for transgenic tobacco plant.
a) Glass
b) Sephadex
c) Polyacrylamide
d) Sodium Alginate

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 3 = 15)

- 6 a Explain the isolation of industrially important microorganism.
OR
b Sketch on the basic design of a fermenter.
- 7 a Produce the production process of citric acid.
OR
b State the production process of any one beta lactams.
- 8 a Define vector and characteristics of ideal cloning vector.
OR
b Explain the historical development of recombinant DNA technology.
- 9 a Determine the physical adsorption and encapsulation techniques of immobilization of enzymes.
OR
b Explain the manufacturing process of microbial amylase.
- 10 a Discuss the application of DNA technology in producing herbicidal resistance plants.
OR
b Apply the role of biotechnology in producing transgenic plants with improved storage proteins.

Cont...

SECTION -C (30 Marks)

Answer ALL questions
ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a Explain the strain improvement methods.
OR
b Highlight on the aerobic and anaerobic fermentation and their application in biotechnology industry.
- 12 a Enumerate on the production of Ethanol and Butanol.
OR
b Explain the production process of penicillin.
- 13 a Elaborate the steps involved in recombinant DNA technology with diagram.
OR
b Enumerate the enzymes Restriction endonuclease and ligase as a tool for recombinant DNA technology.
- 14 a Criticize the pros and cons of genetically modified foods and its principles.
OR
b Justify how nanotechnology would help in improving the quality of food products.
- 15 a Explain the role of *Agrobacterium tumefaciens* in genetic engineering.
OR
b Detail on the transgenic plants in reference to stress tolerant.

Z-Z-Z

END