

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION MAY 2025
(Sixth Semester)

Branch – ZOOLOGY

BIOTECHNOLOGY

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

1. Who is invented PCR method for amplification of DNA.
(i) Kary Mullis (ii) David
(iii) Harries and watkins (iv) Thomas mullis
2. How many DNA probes can be fixed in area of 12cm²
(i) 20000 (ii) 16000
(iii) 25000 (iv) 10000
3. The product of protoplast fusion is called _____.
(i) Cell hybridization (ii) In vitro
(iii) Hybrid protoplast (iv) Somatic hybrid
4. Which of the following is a type of fermentor commonly used in large-scale industrial fermentation?
(i) Fed-batch fermentor (ii) Continuous fermentor
(iii) Batch fermentor (iv) All of the above
5. What does BSL-4 represent in terms of biosafety levels?
(i) Low-risk agents
(ii) Pathogens that are handled outside of containment
(iii) Moderate-risk agents
(iv) High-risk agents that pose a significant risk to laboratory personnel and the environment

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a. Explain restriction endonuclease?
OR
b. How does electrophoresis work in DNA analysis?
- 7 a. Define the microinjection.
OR
b. List down the importance of DNA finger print.
- 8 a. How are vaccines produced using biotechnology?
OR
b. What is cryopreservation?

Cont...

- 9 a. Name some microorganisms used for the enzyme production.

OR

- b. List some industrial applications of enzymes.

- 10 a Why are patent rights important?

OR

- b. What are the negative effects of bioethics?

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a Describe about the Polymerase Chain Reaction.

OR

- b Illustrate the pBR322 techniques and how important in the field of biotechnology.

- 12 a Explain the process of inserting recombinant DNA into host cells.

OR

- b Discuss the methods of gene transfer into plant and animal cells.

- 13 a Describe the process of cloning in eukaryotes and its applications.

OR

- b Explain the process and applications of protoplast fusion.

- 14 a Outline the methods and advantages of Biomining.

OR

- b. Discuss the preparation and applications of enzyme immobilization.

- 15 a Outline the guidelines for research in recombinant DNA (rDNA) technology.

OR

- b Elaborate the importance of bio-safety practices in biotechnology research.

Z-Z-Z

END