

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2022
(Fifth Semester)

Branch – ZOOLOGY

BIOTECHNOLOGY - I

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (10 x 1 = 10)

- 1 Which of the following is an RNA dependent DNA synthetase?
(i) DNA polymerase (ii) reverse transcriptase
(iii) deoxyribonuclease (iv) all of these
- 2 The RNA strand in the RNA-DNA hybrid removed by _____
(i) RNAse (ii) Nuclease
(iii) RNase -H (iv) none of these
- 3 λ ZAP vector is an example of _____
(i) phage (ii) Phagemid
(iii) Cosmid (iv) Plasmid
- 4 Which antibiotic resistance is present in PBR322?
(i) Ampicillin (ii) Kanamycin
(iii) Lactase (iv) Gentamycin
- 5 Which of the following is site specific recombination?
(i) Modification (ii) Transposition
(iii) Holiday junction (iv) Retrotransposons
- 6 Aminobenzyloxymethyl filter paper is commonly used for transfer in _____
(i) Western Blotting (ii) Southern Blotting
(iii) Northern Blotting (iv) Dot blotting
- 7 The technique used for separating molecules by passing electric current is _____
(i) fractionation (ii) Centrifugation
(iii) electrophoresis (iv) ELISA
- 8 Molecular scissor is _____
(i) peptidase (ii) urease
(iii) restriction endonuclease (iv) helicase
- 9 A collection of methods that allows correction of a gene that has been diagnosed in child/embryo is called _____
(i) Cloning (ii) gene therapy
(iii) chemotherapy (iv) Dialysis
- 10 The DNA fingerprinting process or technique was invented by _____
(i) Alexa Brown (ii) Bill Jonas
(iii) Neon Mask (iv) Alex Jeffreys

Cont...

SECTION - B (35 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 7 = 35)

- 11 a Write about the spectroscopy.
OR
b What are the enzymes used in Genetic engineering?
- 12 a Describe about the Shuttle Vector.
OR
b Write down the salient features of Cosmids.
- 13 a Compare the CAD gene and CAT gene.
OR
b Explain the major steps are involved in the selection process of recombinants.
- 14 a Illustrate the Octopine Ti plasmids.
OR
b Discuss about the Human interferon gene.
- 15 a State about the DNA probe in diagnosis of diseases.
OR
b Elucidate about the DNA fingerprinting.

SECTION - C (30 Marks)

Answer any THREE Questions

ALL Questions Carry EQUAL Marks (3 x 10 = 30)

- 16 Explain in detail about the history and scope of biotechnology.
- 17 Write an essay on any one animal viral vector used in genetic engineering.
- 18 Give an account on Blotting techniques.
- 19 Explicate the gene cloning in eukaryotes.
- 20 Enumerate the gene therapy with suitable example.

Z-Z-Z

END