

**2024/TDC (CBCS)/EVEN/SEM/  
BTCSEC-401T/008**

**TDC (CBCS) Even Semester Exam., 2024**

**BIOTECHNOLOGY**

**( 4th Semester )**

**Course No. : BTCSEC-401T**

**( Molecular Diagnostics )**

**Full Marks : 50**

**Pass Marks : 20**

**Time : 3 hours**

*The figures in the margin indicate full marks  
for the questions*

**UNIT—I**

**1. Answer any *three* of the following questions :**

**1×3=3**

- (a) Define enzyme immunoassays.**
- (b) What is enzyme immunohistochemical technique?**
- (c) What is immunoblotting?**
- (d) Define polyclonal antibodies.**

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**( Turn Over )**



( 2 )

2. Answer any one of the following questions : 2
- (a) Write a note on conjugation of enzymes.
- (b) Write the uses of monoclonal antibodies.
3. Answer any one of the following questions : 5
- (a) Describe homogeneous and heterogeneous enzyme immunoassays.
- (b) Give an account of applications of enzyme immunoassays in diagnostic microbiology.

UNIT—II

4. Answer any three of the following questions : 1×3=3
- (a) What is single nucleotide fingerprinting?
- (b) Define plasmid fingerprinting.
- (c) What is the full form of AFLP?
- (d) Define nuclear hybridization method.
5. Answer any one of the following questions : 2
- (a) Give a short account of RFLP.

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( 3 )

- (b) Name some molecular methods in clinical microbiology.
6. Answer any one of the following questions : 5
- (a) Describe various applications of PCR.
- (b) Give an account of laboratory tests in chemotherapy.

UNIT—III

7. Answer any three of the following questions : 1×3=3
- (a) Define antibiotics.
- (b) What is antibiotic resistance?
- (c) What is microdilution broth procedure?
- (d) Define macrodilution broth procedure.
8. Answer any one of the following questions : 2
- (a) Write a note on susceptibility tests.
- (b) Give a brief account of tests for bactericidal activity.

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9. Answer any one of the following questions : 5

- (a) Give a detailed account of diffusion test procedures.
- (b) Describe automated procedures for antimicrobial susceptibility tests.

UNIT—IV

10. Answer any three of the following questions :

1×3=3

- (a) What is molecular mimicry?
- (b) Write the features of immunofluorescence.
- (c) Define molecular receptors.
- (d) Define immunodiagnostic tests.

11. Answer any one of the following questions : 2

- (a) Write a note on automation in molecular diagnosis.
- (b) Define idiotypes and anti-idiotypes.

12. Answer any one of the following questions : 5

- (a) Give a detailed account of radioimmunoassay.

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- (b) Describe epitope design and its applications.

UNIT—V

13. Answer any three of the following questions :

1×3=3

- (a) What is GLC?
- (b) Define cell sorting.
- (c) What is Rosie?
- (d) What is knockout mice?

14. Answer any one of the following questions : 2

- (a) Write a note on flow cytometry.
- (b) Differentiate between SEM and TEM.

15. Answer any one of the following questions : 5

- (a) Give a detailed account of HPLC.
- (b) Write an explanatory note on transgenic animals.

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