

(i) . Printed Pages : 3

Roll No. ....

(ii) Questions : 9

Sub. Code : 

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Exam. Code : 

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NEP U.G. Common-Skill Enhancement Course 1<sup>st</sup> Semester  
(2125)

**BIOTECHNOLOGY**

**Paper : Biosafety & Biosecurity BIOSEC1**

**Time Allowed : Three Hours]**

**[Maximum Marks : 45**

**Note :—** Attempt **FIVE** questions in all. Attempt **ONE** question from each unit. Q.No 1 is compulsory.

1. (a) What is a biohazard?
- (b) Why is it important to evaluate the performance of containment and control measures?
- (c) What is the working principle of a HEPA filter?
- (d) What is the basic difference between a laminar flow and a Biosafety cabinet?
- (e) List the best practices while handling contaminated PPEs.
- (f) How is disinfection different from sterilization? 1.5×6

## UNIT—I

2. (a) What are the key components of a biorisk management system?  
(b) Explain the difference between Biosafety and Biosecurity. 5,4
3. (a) What is the importance of risk assessment in a biology laboratory and how is it done?  
(b) Describe risk mitigation strategies required while working with pathogens. 5,4

## UNIT—II

4. (a) Explain different engineering controls that are important for biosafety.  
(b) What is primary and secondary containment? Explain with suitable examples. 4,5
5. (a) Explain the key features of class II and class III Biosafety cabinets.  
(b) List the essential PPEs required to work with Mycobacterium tuberculosis and justify your answer. 4,5

## UNIT—III

6. (a) Describe physical and chemical methods of decontamination used in a laboratory handling pathogens.  
(b) What are the different types of waste generated in the laboratory and how should they be disposed of safely? 4,5

- 7.. (a) Explain various measures to manage laboratory biosecurity.  
(b) What is biological waste? Explain different methods to treat liquid waste. 4,5

#### UNIT—IV

8. (a) What are GLWPs and how do these prevent laboratory-acquired infections?  
(b) Explain the steps involved in the development and validation of SOP for the use of class II Biosafety cabinet. 4,5
9. (a) Explain the importance of documentation and execution of SOPs while handling pathogens.  
(b) Justify that GLWPs are essential to manage biosafety and biosecurity. 4,5