Reg.No.:												

VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
[AUTONOMOUS INSTITUTION , AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

Question Paper Code: 90037

M.E. / M.Tech. DEGREE END-SEMESTER EXAMINATIONS – JAN. / FEB. 2026
Second Semester
Biotechnology
P23BTE25 – FORENSIC BIOTECHNOLOGY
(Regulation 2023)

Time: Three Hours | Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 - Evaluating
	K2 – Understanding	K4 – Analyzing	K6 - Creating

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	List out the types of evidences to be collected crime scene investigation.	2	K1	CO1
2.	Write a note on Processing of crime scene.	2	K2	CO1
3.	List out the methods for DNA and RNA extraction.	2	K1	CO2
4.	What is DNA Fingerprinting Technique?	2	K1	CO2
5.	Define Forensic Serology.	2	K1	CO3
6.	How the species identification done from biological sample?	2	K2	CO3
7.	Write down the types of fibers collected as physical evidence in the characterization of non-biological samples.	2	K2	CO4
8.	Write a note on fingerprint Analysis.	2	K2	CO4
9.	Differentiate between Forensic Pathology and Forensic Anthropology.	2	K2	CO5
10.	What are the methods for the toxicological analysis of Alcohol?	2	K1	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.		Questions	Marks	KL	CO
11.	a)	Explain the collection and processing for Crime Scene Investigation of Biological Evidence.	13	K2	CO1

(OR)

	b)	Interpret the methodology involved in discerning or excluding the events and actions that transpired at the crime scene through the utilization of crime scene reconstruction techniques.	13	K2	CO1
12.	a)	Explain any one of analytical techniques in forensic biotechnology for DNA quantification.	13	K3	CO2
		(OR)			
	b)	Identify and illustrate into a laboratory method employed for ascertaining the likely identity of an individual by analyzing the nucleotide sequences of specific regions of human DNA that exhibit uniqueness among individuals.	13	K3	CO2
13.	a)	Classify about the types of Blood typing and methods for the Detection of Blood using Heredity and paternity.	13	K2	CO3
		(OR)			
	b)	Outline the analytical techniques for identification of Saliva, Urine and Sweat.	13	K2	CO3
14.	a)	How is the Characterization of non-biological sample done? Enumerate on examination of fibers.	13	K3	CO4
		(OR)			
	b)	How do the prints detected at crime scenes? Explain the collection, Preservation and development of Fingerprints.	13	K3	CO4
15.	a)	Describe the various techniques employed in the analysis of controlled substances and toxins.	13	K2	CO5
		(OR)			
	b)	Give a note on Drug. Distinguish the types of drugs and its effects on the users.	13	K2	CO5

PART – C

(1 x 15 = 15 Marks)

Q.No.		Questions	Marks	KL	CO
16.	a)	Design a case where DNA profiling was pivotal in solving a crime. What were the key steps involved in the forensic analysis? How has the advancement of DNA sequencing technologies impacted forensic investigations?	15	K4	CO2
		(OR)			
	b)	Devise a case where forensic biotechnology was used to analyze biological evidence (such as blood, saliva, or hair) to link a suspect to a crime scene. What are the challenges faced in preserving and analyzing biological evidence, and how can biotechnological methods overcome these challenges?	15	K4	CO3