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: 9001

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – MAY / JUNE 2024
Eighth Semester
Biotechnology
U19BTE17 – INDUSTRIAL BIOSAFETY
(Regulation 2019)

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.	Infer the role of acrosols in LAIs.	2	K2	CO1
2.	Classify the biosafety levels.	2	K2	CO1
3.	Differentiate between on-site and off-site emergency plan.	2	K2	CO2
4.	What are the four harmful effects of radiation?	2	K1	CO2
5.	Define of GMOs & LMOs. Give TWO examples each.	2	K1	CO3
6.	State the Cartagena Protocol.	2	K1	CO3
7.	Infer the BSL2 certification.	2	K2	CO4
8.	List the three major elements of bio containment.	2	K1	CO4
9.	Who is the current CEO of FSSAI? Where is the headquarter of FSSAI?	2	K1	CO5
10.	State the role of IBSC.	2	K1	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.		Questions	Marks	KL	CO
11.	a)	Explain in detail about the types of laboratory accidents leading to LAIs.	13	K2	CO1

(OR)

	b)	Summarize the history and incidence of Laboratory-Acquired Infections (LAI) in biosafety cabinet.	13	K2	CO1
12.	a)	Interpret the Quantitative risk assessment, rapid and comprehensive risk analysis with suitable examples.	13	K3	CO2
		(OR)			
	b)	Demonstrate how ISO 14000 is important for risk management with suitable example.	13	K3	CO2
13.	a)	Explain in detail about GMO applications in food and agriculture.	13	K2	CO3
		(OR)			
	b)	Compare and contrast the risk analysis, risk assessment, risk management and communication terms with respect to biosafety.	13	K4	CO3
14.	a)	Exemplify the regulation and procedure of certification for establishing a new bio-containment laboratory with a neat flow sheet.	13	K2	CO4
		(OR)			
	b)	Portray the architectural and key security features in designing a bio containment laboratory.	13	K2	CO4
15.	a)	Expand and brief the functions of the following: i. OECD ii. EPA	7 6	K2	CO5
		(OR)			
	b)	Elaborate the rules, guidance documents, regulatory and framework of RCGM and GEAC.	13	K2	CO5

PART – C

(1 x 15 = 15 Marks)

Q.No.		Questions	Marks	KL	CO
16.	a)	Explain in detail about Models of International Emergency Medical Service (EMS) Systems with suitable case studies.	15	K4	CO2
		(OR)			
	b)	With an example case study, analyze the risk factors involved in maintaining the biosafety in rDNA laboratories.	15	K4	CO5