U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

January 2024 Semester End Main Examinations

Programme: B.E. **Semester: VII**
Branch: Institutional Elective **Duration: 3 hrs.**
Course Code: 23PY7IERHP **Max Marks: 100**
Course: Radiation Hazards and Protection

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

			MODULE - I	*CO*	*PO*	Marks
1	a)		Describe the half value layer and Linear attenuation coefficient.	CO1	PO1	**10**
	b)		What are the main sources of natural radioactivity? Explain.	CO1	PO1	**10**
			OR			
2	a)		Discuss photoelectric effect, compton scattering and pair production with neat diagram.	CO1	PO1	**10**
	b)		Explain the following terms: i) Alpha emission ii) beta emission iii) gamma emission iv) absorbed dose	CO1	PO1	**10**
			MODULE - II			
3	a)		Mention the Radiation monitoring instruments used for area monitoring and for individual monitoring. Explain any two individual monitoring instruments.	CO1	PO1	**10**
	b)		Explain the Planning of nuclear medicine laboratories.	CO1	PO1	**10**
			OR			
4	a)		Describe in detail the Radiation protection in diagnostic and therapeutic nuclear medicine.	CO1	PO1	**10**
	b)		Elucidate the process involved in Radiation monitoring and decontamination procedures.	CO1	PO1	**10**
			MODULE - III			
5	a)		Mention different Radiation emergencies. Explain any two Radiation emergencies.	CO1	PO1	**10**
	b)		Mention the different steps involved in Regulatory aspects & licensing for production and using of radionuclides.	CO1	PO1	**10**

			MODULE - IV			
	6	a)	Explain the working of gamma camera with neat labeled diagram.	CO1	PO1	**10**
		b)	Discuss the working of scintillation detector with a neat diagram.	CO1	PO1	**10**
			MODULE - V			
	7	a)	What is mechanism of non-destructive testing? Explain different radiation processing technologies.	CO1	PO1	**10**
		b)	Explain different types of materials modification done using radiations.	CO1	PO1	**10**

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