Q.P. Code: 20ME3112 **R20**

Reg. No: | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

M.Tech I Year I Semester Regular Examinations July-2021

NUCLEAR ENGINEERING

(Thermal Engineering)

Time: 3 hours Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1		What is the need for enrichment of uranium? Describe the most efficient and elaborated methods suited to produce highly enriched U^{235}.	L1	12M
		OR		
2	a	What is chain reaction? What is the difference between controlled and uncontrolled chain reaction?	L1	6M
	b	How to convert nuclear fuels into fertile materials?	L1	6M

UNIT-II

3	a	Elastic Collisions are the important source for the nuclear power. Justify.	L5	6M
	b	Write the salient equations of Neutron diffusion theory.	L2	6M
		OR		
4	a	Mention various parameters considered in neutron transport calculations.	L2	4M
	b	Explain about Elastic Collision.	L2	8M

UNIT-III

5		How do you find the solution for multi group diffusion equations.	L1	12M
		OR		
6	a	What are the merits and demerits of PWR .	L2	6M
	b	Why thermal reactors are more crucial in power generation.	L1	6M

UNIT-IV

7		Mention the significance of point kinematic equations in the nuclear power.	L2	12M
		OR		
8		Write the factors which affects the reactivity.	L2	12M

UNIT-V

9		How the temperature is distributed in reactor core.	L1	12M
		OR		
10		Mention the various safety precautions of Reactor core in nuclear power plant.	L2	12M

*** END ***