Regulation R18 Subject code: 2O6CA

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A' Grade)

B.Tech VI Semester Supplementary Examinations, June/July 2023

NUCLEAR POWER GENERATION AND SYSTEM

(Mechanical Engineering)

Maximum Marks: 70 Date:30.06.2023 **Duration: 3 Hours**

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 10 questions. Answer any 5 questions which carries 10M.
4. Each question carries 10marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10x2M=20 Marks)

1 Define the nuclear fission process?
2 What is uranium enrichment process?
3 Explain about reactor pressure vessel?
4 Explain about neutron flux?
5 Explain about reactor design in terms of safety.
6 Differentiate between loss of coolant and shielding coolant?
7 What are advantages of gas cooled reactor?
8 Why shut down of plant is need?
9 Define radioactive?
10 How are nuclear wastes classified?

Part-B

Answer all the questions (10MX 5=50Marks)

11 What is meant by enrichment? How is uranium fuel enriched? [10]

OR

12 What is need for interim storage of spent fuels? [10]
13 Explain neutron flux monitoring and control? [10]

OR

14 Explain auxiliary cooling system in nuclear power plant? [10]
15 What are the operator errors in nuclear power plant? [10]

OR

16 Explain the CANDU reactor with neat diagram? [10]
17 Explain the pressurized heavy water reactor with neat diagram. [10]

OR

18 Explain about reactor regulating system? [10]
19 What is the basic objective in safe design of nuclear reactors? [10]

OR

20 Explain briefly the different steps in radio-active waste management? [10]