Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

FT-6002 (CBGS)

B.E. VI Semester

Examination, November 2019

Choice Based Grading System (CBGS)

Nuclear Safety and Radioactive Materials

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.

ii) All questions carry equal marks.

1. Define radiation, Draw electromagnetic spectrum and its real life examples of these wave lengths. Why some isotopes are radioactive, Deduct formula for radioactive half life link to decay constant? 14

2. Describe Ionizing radiation effect and their biological radiation exposure. Explain internal and external ionizing radiation effect sources in our body. 14

3. a) Draw and explain Geiger Muller counter with their work and it's used. 7

   b) Discuss radioactive pyrophoric material and fire fighting guideline for thorium, plutonium. 7

4. a) Why radiation placards and label requirements for used in transportation, packaging and storage for radioactive material? 7

   b) Discuss the pre plan of radiation incident or hazards in nuclear power plants for radiation emergency. 7

5. Describe PHWR (CANDU) with schematics figures and their engineered safety feature. 14

6. Write short notes on : (any four) 14

   i) Alpha, Beta and Gamma

   ii) Scintillation counters

   iii) PWR

   iv) ATWS

   v) LOCA

7. Describe radioactive waste management and explain solid, liquid and gas radioactive waste management. What precautions should be taken for handling of radioisotope waste? 14

8. Write any case study of nuclear power plant Accident. Discuss the safety conditions required during an accident in Nuclear power plant. 14

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