Roll No ..

FT-6002 (CBGS)

B.E. VI Semester

Examination, May 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. Draw and explain Electromagnetic spectrum and its real life example of these wave lengths? Why some isotopes are radioactive. Deduct formula for radioactive half life link to decay constant? 14

2. Describe Radioactivity phenomena and their reason of radioactivity? Explain internal and external ionizing radiation effect sources in our body. 14

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

   b) Discuss radioactive pyrophoric material and fire fighting guideline for uranium, plutonium? 7

4. a) What are radiation placard and label and their requirements for used in transportation, packaging and storage for radioactive material? 7

   b) Discuss Emergency preparedness plan and handling requirements in nuclear power plants for radiation emergency. 7

5. Describe PWR and BWR with schematics figures and their engineered safety feature. 14

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

   i) Units of radiation and occupational doses

   ii) G.M. counters

   iii) PHWR (CANDU)

   iv) ATWS

   v) Role of enriched uranium and moderators

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 the case study of Chernobyl Accident? Discuss the safety conditions required during an accident in Nuclear power plant. 14

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