

B.Sc. IN MEDICAL IMAGING TECHNOLOGY**Term-End Examination****December, 2015****BAHI-031 : BASICS OF RADIOLOGICAL PHYSICS****Time : 3 hours****Maximum Marks : 70****PART - A**

Answer **any five** questions. Each question carries
8 marks.

5x8=40

1. What is Rectifier ? Describe the full wave rectifier used in X-ray machine.
2. Describe the stationary anode X-ray tube with neat diagram.
3. What is Radioactivity ? Derive the equation
$$N = N_0 e^{-\lambda t}.$$
4. Describe the Biological effects of radiation.
5. Describe :
 - (a) Photoelectric effect.
 - (b) Compton effect.
6. Describe the various protective devices used in the Radiology Department.
7. Describe the free air ion chamber. How it is used to measure the exposure rate of gamma rays ?
8. Describe the personnel monitoring devices used in Radiology Department.

PART - B

9. Write short notes on **any five** of following. Each carries **six** marks : **5x6=30**
- (a) Half life.
 - (b) Auto transformer.
 - (c) Anode heel effect.
 - (d) Kirchoff's Law.
 - (e) Maximum permissible dose limits.
 - (f) Filtration in the X-ray tube.
 - (g) β - Decay.
 - (h) Properties of X-rays.
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