No. of Printed Pages : 2

BAHI-031

B.Sc. IN MEDICAL IMAGING TECHNOLOGY

Term-End Examination

June, 2014

8800

BAHI-031 : BASICS OF RADIOLOGICAL PHYSICS

Time : 3 hours *Maximum Marks : 70*

PART - A

Answer **any five** questions. **8x5=40**

1. Describe in detail about the principle, construction and working of an X-ray tube with a neat diagram.

2. What are the internal and external hazards of a radioactive material ? How the radiation exposure to staff, patient and public can be minimised in a radiology department.

3. Explain the principle, construction and working of a step-up-transformer. What are the transformer losses and how these can be minimised ?

4. What is meant by artificial radioactivity ? Describe the commonly used radioisotopes and their use in medicine.

5. Describe in detail about the photo electric and compton effect.

6. Define radiation exposure and absorbed dose. Explain briefly about the different methods used for the measurement of radiation.

7. What is meant by quality and intensity of a radiation beam ? Discuss in detail about the different factors which influence the quality and intensity of a radiation beam.

8. Why personnel monitoring is necessary in a radiology department ? Explain in detail about any one commonly used personnel monitoring device.

PART - B

9. Write short notes on **any five** of the following : **6x5=30**

   (a) Characteristic radiation
   (b) Use of added filter
   (c) Electromagnetic spectrum
   (d) Transformer efficiency
   (e) ICRP recommendations for radiation workers
   (f) Maximum permissible dose
   (g) Inverse square law
   (h) Half value thickness