

[LG 0215]

FEBRUARY 2015

Sub.Code :1902

**B.Sc. RADIOTHERAPY TECHNOLOGY
FIRST YEAR
PAPER II – BASIC PHYSICS & RADIATION PHYSICS
Q.P. Code: 801902**

Time: Three Hours

Maximum : 100 Marks

Answer All Questions

I. Elaborate on: (3 x 10 = 30)

1. What are quality and intensity of x-rays? Explain with graphs the factors that affect the quality and intensity of x-rays.
2. What is a radio isotope? Explain three methods of production of artificial radio isotopes.
3. With neat diagrams, explain the principle and working of half wave and full wave rectifiers. Mention the use of these rectifiers.

II. Write Notes on: (8 x 5 = 40)

1. Explain direct and alternating current.
2. Space charge effect and focusing cup
3. What is Compton interaction? Explain the factors that the Compton interaction depends on.
4. What is thimble ion chamber?
5. With neat diagrams explain Film badge and pocket dosimeters.
6. Draw and explain the magnetic hysteresis curve.
7. Auto transformer.
8. Periodic table.

III. Short Answers on: (10 x 3 = 30)

1. Explain series and parallel circuits of resistors and capacitors.
2. What are characteristic x-rays?
3. Define Kerma and absorbed dose
4. Define pair production.
5. What is Linear Energy Transfer (LET)?
6. What are the properties of alpha-rays?
7. An atom with mass number of 234 and atomic number of 92 emits an alpha particle, what will be the mass number and atomic number of the daughter element?
8. What is a three phase circuit?
9. What is a chain reaction in nuclear reactor?
10. Define Quality factor.
