

[LI 0416]

APRIL 2016

Sub. Code: 4011

**M.Sc., MEDICAL PHYSICS DEGREE EXAMINATION
FIRST YEAR
PAPER I – RADIATION PHYSICS**

Q.P. Code : 284011

Time : Three hours

Maximum : 100 Marks

I. Elaborate on :

(2 x 20 = 40)

1. A step up transformer has a turns ratio of 500:1 and a regulation of 2 % when the secondary output current is 400 mA. What is the secondary output voltage that accompanies this current if the primary input voltage is 200 V.
2. Discuss in detail the characteristics of heavy charged particle of radiation.

II. Write notes on :

(10 x 6 = 60)

1. Explain about Rutherford's nuclear atomic model.
2. Write note on motion of electron in a magnetic field.
3. Calculate the energy of one atomic mass unit in MeV.
4. Distinguish between wave model and quantum model
5. Explain about radioactivity.
6. Discuss about photon energy flux and fluence.
7. Explain about detour factors.
8. Discuss about neutron interaction with matter.
9. What are difference between dose and KERMA?
10. Person received equivalent dose of 20 mSv from alpha radiation. Calculate the absorbed dose.
