March 2009

[KU 140] **Sub. Code: 2035**

M.D. DEGREE EXAMINATION

Branch IX – RADIO THERAPY
(Common to all candidates)

Paper I – MEDICAL RADIATION PHYSICS AS APLLIED TO RADIOTHERAPY AND RADIATION BIOLOGY
Q.P. Code : 202035

Time : Three hours **Maximum : 100 marks**

Draw suitable diagram wherever necessary.
Answer ALL questions.

I. Essay questions : **(2 x 20 = 40)**

1. Given an account of Radiation protection as relevant to radiation oncology practice.

2. Discuss on Radiation induced DNA damage and repair.

II. Write short notes on : (10 x 6 = 60)

1. Apoptosis.
2. ISO-dose charts.
3. Describe cell cycle.
4. Tr-192.
5. Dose – volume histograms.
6. Compton scatter.
7. ICRU – 58.
8. HDR Brachytherapy.
9. Therapeutic Ratio.
10. Beam modifying devices.

******

September 2009

[KV 140] **Sub. Code: 2035**

M.D. DEGREE EXAMINATION

Branch IX – RADIO THERAPY
(Common to all candidates)

Paper I – MEDICAL RADIATION PHYSICS AS APLLIED TO RADIOTHERAPY AND RADIATION BIOLOGY
Q.P. Code : 202035

Time : Three hours **Maximum : 100 marks**

Draw suitable diagram wherever necessary.
Answer ALL questions.

I. Essay questions : **(2 x 20 = 40)**

1. Name the various brachytherapy implant dosimetry systems and describe any one in detail.

2. Discuss interaction of energy with matter. Highlight it's importance in clinical practice.

II. Write short notes on : **(10 x 6 = 60)**

1. The cell cycle and it's relevance.
2. Iridium – 192.
3. Isocentric technique.
4. Maximum permissible dose.
5. Wedges.
6. Radiosensitivity.
7. Particulate radiation.
8. Hyperbaric oxygen.
9. Radiation effects on skin.
10. Percentage depth dose.

******

March 2010

[KW 140] **Sub. Code: 2035**

M.D. DEGREE EXAMINATION

Branch IX – RADIO THERAPY
Paper I – (for candidates admitted upto 2007-2008) and
Part I – (for candidates admitted from 2008-2009 onwards)

MEDICAL RADIATION PHYSICS AS APLLIED TO RADIOTHERAPY AND RADIATION BIOLOGY
Q.P. Code : 202035

Time : Three hours **Maximum : 100 marks**

Draw suitable diagram wherever necessary.
Answer ALL questions.

I. Essay questions : **(2 x 20 = 40)**

1. Treatment planning systems in modern radiotherapy – Discuss.

2. Discuss stereotactic radio-surgery.

II. Write short notes on : **(10 x 6 = 60)**

1. Neutron beam therapy.
2. Bolus.
3. Strontium 90.
4. Integral dose.
5. Image guided radiotherapy.
6. Immobilization devices.
7. T.L.D.
8. Simulator.
9. Isocenter.
10. Tissue air ratio.

******