RADIATION ONCOLOGY

PAPER-I

Time: 3 hours RTH/D/20/41/I
Max. Marks:100

Important Instructions:

- ***You are provided with 5 answer sheet booklets. Each individual answer sheet booklet consists of 10 pages excluding the covering jackets.***
- ***Answers to all the questions must be attempted within these 5 answer sheet booklets which must be later tagged together at the end of the exam.***
- ***No additional supplementary answer sheet booklet will be provided.***
- *Attempt all questions in order.*
- *Each question carries 10 marks.*
- *Read the question carefully and answer to the point neatly and legibly.*
- *Do not leave any blank pages between two answers.*
- *Indicate the question number correctly for the answer in the margin space.*
- *Answer all the parts of a single question together.*
- *Start the answer to a question on a fresh page or leave adequate space between two answers.*
- *Draw table/diagrams/flowcharts wherever appropriate.*

Write short notes on:

1. a) Describe anatomy and lymph drainage of the breast. 3+3+4
   b) Discuss the role of sentinel node dissection / sampling with relevant literature with respect to carcinoma breast.
   c) Discuss the current indications and technique of radiotherapy to the axilla.

2. Discuss the role of Regional Cancer Centre's in the Indian Health Care System. 10

3. a) Describe the Dosimetric tools and techniques for Intensity Modulated Radiotherapy. 5+5
   b) Compare and contrast Magnetic Resonance Imaging and various Computerized Tomography based 3D Image Guided Brachytherapy.

4. a) Role of PET-CT in staging lung cancer. 3+3+4
   b) Molecular markers in lung cancer.
   c) VATS.

5. a) Kaplan Meier analysis 3+3+4
   b) Sample size calculation
   c) Sensitivity and Specificity

6. a) Clinical applications of Cyberknife based Radiotherapy. 5+5
   b) Clinical applications of Proton Beam Therapy.

7. a) The physical properties and clinical applications of currently used sealed radionuclides in a tabulated form. 3+3+2+2
   b) Inverse square law as applied to dose distribution of brachytherapy sources.
   c) Air kerma strength.
   d) Relation between activity of a radionuclide and the exposure rate. **P.T.O.**

RADIATION ONCOLOGY
PAPER-I

8. a) Percentage depth dose. 2.5x4
   b) Rotational arc therapy.
   c) Wedge filter.
   d) Isodose curves.

9. a) PARIS system of Interstitial brachytherapy. 5+5
   b) Its role in current radiotherapy practice.

10. Describe the anatomy and lymphatic drainage of nasopharynx. What are the cranial nerve involvement syndromes seen in carcinoma nasopharynx? 10

****