

RADIOTHERAPY

PAPER-I

Time: 3 hours
 Max. Marks:100

RTH/J/20/41/I

Important Instructions:

- 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) Radiological anatomy of hippocampus. 4+6
 b) Evidence based importance of hippocampus in radiotherapy practice.
2. Physical characteristics and clinical applications of electron beam treatment. 5+5
3. a) Define quality assurance in radiotherapy. 2+4+4
 b) Important aspects of quality assurance for a linear accelerator.
 c) Random and systematic errors.
4. a) Physical and dosimetric properties of proton. 6+4
 b) Clinical use of proton therapy with supporting evidence.
5. a) Cancer Atlas India. 2+4+4
 b) National Cancer Screening Programme.
 c) NCRP.
6. a) Sample size calculation. 5+3+2
 b) Odds ratio.
 c) Positive predictive value.
7. a) Define hypoxia and its implication in oncology practice. 6+4
 b) Write on agents used to circumvent hypoxia.
8. a) Dose escalation strategies for radiation in head & neck cancer. 5+5
 b) Principles of management of cancer in the COVID-19 era.
9. a) Radiobiological aspects of stereotactic body radiotherapy (SBRT). 3+5+2
 b) Hormone therapy in cancer breast.
 c) Mammaprint.
10. a) Phase II trial. 5+5
 b) ICRU 83.
