FINAL EXAM NATIONAL BOARD OF EXAMINATIONS
JUNE 2020

RADIOTHERAPY

PAPER-I

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

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.

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