

RADIOTHERAPY

PAPER-I

RTH/D/18/41/I

Time: 3 hours
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) Current 8th AJCC staging system for oropharyngeal cancer. 6+4
b) Discuss the reasons and evidence for modification of the staging system for oropharyngeal cancer.
2. a) Define radiotherapy volumes as per ICRU 62. 7+3
b) Define “dose homogeneity”, “hot spot” and “Internal Margin”.
3. a) Methodology, advantages and pitfalls of “Meta-analysis”. 5+5
b) What is a “Forest Plot”? Describe with a diagram.
4. a) Discuss “ICRU 89” for image guided brachytherapy. 7+3
b) Define various dose rates used in brachytherapy.
5. a) Interactions of photons with matter and the factors on which they depend. 7+3
b) What are “Characteristic X-rays” and “Bremsstrahlung X-rays”?
6. a) Depth dose profile of electron beams. 3+3+2+2
b) Energy selection in electron therapy.
c) Shielding in electron therapy.
d) Practical range of electrons.
7. Define and explain the following terms in photon therapy: 2+2+2+2+2
a) Wedge angle.
b) Hinge angle.
c) Tissue Air Ratio (TAR).
d) SSD and SAD.
e) Dmax.
8. a) Methodology of Phase-III clinical trials. 6+4
b) Kaplan Meier Survival Curve.
9. a) Cancer Registry in India. 5+5
b) What are the screening recommendations and methods for cervical cancer?
10. a) Lymphatic drainage of stomach. 6+4
b) What is meant by D1 and D2 dissection in gastric cancer?
