

Maintenance of Certification Therapeutic Medical Physics Study Guide Updated 5/2011

General Information

Approximately 30% of the material on the examination is core therapeutic medical physics, technology, and safety. The rest is taken from recent advances in the field.

Length and Structure

The exam is approximately 100 questions in length. All questions are multiple-choice, and most have four possible answers. A standard calculator is available, but no complex calculations are required.

Clinical Procedures

Candidates should have a general knowledge of common radiation therapy procedures.

The following items may be used to generate content for the exam:

Reports from the American Association of Physicists in Medicine (AAPM) and the National Council on Radiation Protection and Measurements (NCRP):

NCRP Report No. 116

NCRP Report No. 151

NCRP Report No. 160

BEIR VII

AAPM Task Group 36 report

AAPM Task Group 40 report

AAPM Task Group 42 report

AAPM Task Group 43 report and updates

AAPM Task Group 51 report

AAPM Task Group 66 report

AAPM Task Group 75 report

AAPM Task Group 76 report

AAPM Task Group 105 report

AAPM Task Group 106 report

AAPM Task Group 119 report

ICRU Report No. 50 and 62

Journal articles, such as Ezzell et al. Guidance document on delivery, treatment planning, and clinical implementation of IMRT: Report of the IMRT subcommittee of the AAPM radiation therapy committee. *Med. Phys.* 2003;30:2089-2115.

Red Journal

Sample Questions

A linear accelerator is calibrated to deliver 1 cGy/MU at 100 cm source-to-surface distance (SSD). What is the approximate dose per monitor unit at an SSD of 400 cm used for total-body photon irradiation?

- A. 16 cGy/MU
- B. 4 cGy/MU
- C. 1 cGy/MU
- D. 1/16 cGy/MU

Key = D

Which of the following statements regarding wedge orientation is true?

- A. For breast tangents with supine setup, the heels are typically posterior.
- B. For a 90° pair treating the parotid, the toes are directed toward each other.
- C. When used on an anteroposterior (AP) field to compensate for the slope of the superior chest, the heel is superior.
- D. For a three-field treatment to the rectum, the heels are typically anterior.

Key = C

According to the American Association of Physicists in Medicine (AAPM), multileaf collimator (MLC) leaf position accuracy should be maintained at no more than:

- A. 1 cm.
- B. 2 mm.
- C. 1 mm.
- D. 0.5 mm.

Key = C