



2013 THERAPY SUBJECT INDEX

Covering 2009–2012

This subject index for the Raphex Therapy Examination booklets is arranged by year and question number (T1–T140).

I. ATOMIC AND NUCLEAR STRUCTURE (+ DECAY AND RADIOACTIVITY)

A. The Atom

2009 T1, T2, T3
2010 T1–T10
2011 –
2012 T1, T5

B. Radioactivity and Decay

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2010 –
2011 T1, T2, T3, T4
2012 T2, T3, T4

2. PRODUCTION OF X-RAYS, PHOTONS, AND ELECTRONS

A. Basic Physics of X-ray Beam Production

2009 T7, T8, T9
2010 T11
2011 T5, T6, T7, T8, T10
2012 T8, T9, T10, T13

B. Generation of Beams

2009 T10, T11, T12
2010 T12, T13, T15
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2012 T9

3. TREATMENT MACHINES AND GENERATORS; SIMULATORS (+ CT)

A. Linacs

2009 T13
2010 T16, T17, T18, T19, T20
2011 T11, T12, T64
2012 T6, T11, T14, T15, T16

B. Linac Collimation Systems and Other Teletherapy

2009 T14, T15, T16
2010 T37, T59, T69
2011 T9, T13, T24
2012 T12

C. Simulators

2009 T17, T18
2010 –
2011 –
2012 –

4. RADIATION INTERACTIONS

A. Interactions of X-rays and Gamma Rays with Matter

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2010 T23, T24, T27, T28
2011 T15, T16, T17, T18, T19, T20, T21, T22
2012 T18, T19, T20, T21, T22

B. Attenuation of Photon Beams

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2010 T25, T26, T29
2011 T23, T25, T26, T28
2012 T17

C. Interactions of Particulate Radiation

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2011 T29
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5. RADIATION BEAM QUALITY AND DOSE

A. Monoenergetic and Polyenergetic Bremsstrahlung Beams

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2010 T31, T32
2011 T30
2012 T23, T24, T25, T29

B. Dose Quantities and Units

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2010 –
2011 T27
2012 T26, T27, T28, T30

C. Relationships of Kerma, Dose, and Exposure

2009 T31, T34
2010 T30, T33, T35, T36
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2012 –

6. RADIATION MEASUREMENT AND CALIBRATION

A. Calculation of Dose

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2010 T38, T39, T42
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2012 –

B. Dose Output Calibration

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2011 T32, T33, T34, T35, T36, T37, T38
2012 T32, T33, T35, T36, T37

C. Clinical Dosimetry

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2010 –
2011 –
2012 T31, T34

7. PHOTONS AND X-RAYS (+ CONCEPTS, ISODOSES, MU, HETEROGENEITIES, FIELD SHAPING, COMPENSATION, FIELD MATCHING, ETC.)

A. External Beam Dosimetry Concepts (Pt. I)

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2010 T48, T50, T51, T52, T53, T54, T55, T56, T57
2011 T52, T53, T54, T55, T56
2012 –

B. External Beam Dosimetry Concepts (Pt. II)

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C. System of Dose Calculations

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D. Translation of Computerized Planning

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E. Computerized Treatment Planning

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F. Surface Corrections and Heterogeneity Calculations

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G. Adjoining Fields and Special Dosimetry Problems

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8. ELECTRON BEAM CHARACTERISTICS AND PLANNING

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B. Treatment Planning with Electrons

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2010 T73
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9. EXTERNAL BEAM QUALITY ASSURANCE

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11. RADIATION PROTECTION AND SHIELDING

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B. Radiation Shielding

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2010 T83, T84, T87, T88
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12. IMAGING FOR RADIATION ONCOLOGY

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2010 T89, T93
2011 T87, T88
2012 T88, T95

B. CT and PET

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2010 T90, T91
2011 T85
2012 T82, T86, T87, T91, T92, T96, T99, T100

C. MRI and Ultrasound (MRI Scanning)

2009 T90, T91
2010 T92
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D. Use of Imaging in Treatment Planning

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13. 3D-CRT (INCLUDING ICRU CONCEPTS AND BEAM-RELATED BIOLOGY)

- A. 3D-CRT Concepts; Volumetric vs. Non-volumetric**
 - 2009 T92, T93, T94
 - 2010 –
 - 2011 T82, T97, T98
 - 2012 –
- B. Volumetric Beam Placement**
 - 2009 T95
 - 2010 –
 - 2011 T40, T42, T43
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- C. Treatment Planning Methods**
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 - 2010 T97, T98, T99
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14. ASSESSMENT OF PATIENT SETUP AND TREATMENT (+ EPID, IMMOBILIZATION, ETC.)

- A. Positioning and Immobilization Methods and Devices**
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- B. Treatment Verification**
 - 2009 T99, T100, T101, T102, T103, T104
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15. IMRT

- A. IMRT Delivery Systems**
 - 2009 T105, T106
 - 2010 T104, T105, T108
 - 2011 T103, T105
 - 2012 T108, T109, T110, T111, T116, T117, T118
- B. Dose Prescription and Inverse Planning**
 - 2009 T107
 - 2010 T103, T106, T107
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- C. IMRT QA**
 - 2009 T108, T109
 - 2010 T109
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16. SPECIAL PROCEDURES (+ RADIOSURGERY, TBI, ETC.)

- A. Delivery and Positioning**
 - 2009 T111
 - 2010 T110
 - 2011 –
 - 2012 –
- B. SRS Dose Prescription and Planning, QA**
 - 2009 T112
 - 2010 –
 - 2011 T108, T109, T110, T111, T112, T113, T114, T115
 - 2012 T120, T122
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17. BRACHYTHERAPY (+ INTRACAVITARY, INTERSTITIAL, HDR, ETC.)

- A. Radioactive Sources (General Information) and Calibration**
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 - 2010 T117, T118, T119, T121, T122, T123, T124, T127, T128
 - 2011 T123
 - 2012 –
- B. Calculations of Dose Distributions**
 - 2009 T119, T121, T122, T123, T130
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- C. Implantation Techniques**
 - 2009 T114, T115, T126
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- D. Gynecological Implants/Insertions**
 - 2009 T124, T125, T126
 - 2010 T114, T116, T125
 - 2011 T116, T119, T120, T121, T126, T127, T128
 - 2012 T124
- E. Systems of Implant Dosimetry**
 - 2009 T127, T128
 - 2010 –
 - 2011 –
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- F. QA and Safety**
 - 2009 T120, T129, T131
 - 2010 T81, T86, T120, T129
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18. RADIOPHARMACEUTICAL PHYSICS AND DOSIMETRY

- A. Methods of Production and Clinical Treatments**
 - 2009 T133
 - 2010 –
 - 2011 T122, T129
 - 2012 –
- B. Internal Dosimetry and Safety**
 - 2009 T132, T134, T135
 - 2010 –
 - 2011 T31, T130, T131
 - 2012 –

19. HYPERTHERMIA

- A. Physics Aspects of Hyperthermia**
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 - 2012 T134
- B. External Superficial Electromagnetic Hyperthermia Applicators**
 - 2009 –
 - 2010 –
 - 2011 –
 - 2012 –
- C. Interstitial Electromagnetic Hyperthermia Applicators**
 - 2009 –
 - 2010 –
 - 2011 –
 - 2012 T133
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 - 2009 –
 - 2010 –
 - 2011 –
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20. PARTICLE THERAPY

- A. Cyclotrons and Synchrotrons**
 - 2009 –
 - 2010 –
 - 2011 –
 - 2012 –
- B. Protons**
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 - 2012 T135, T136, T137, T138
- C. Neutrons**
 - 2009 –
 - 2010 –
 - 2011 –
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- D. Safety and Shielding for Protons and Neutrons**
 - 2009 –
 - 2010 –
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