



2018 THERAPY SUBJECT INDEX

Covering 2014–2017

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

2014 T6
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2016 T3
2017 T3, T9

B. Radioactivity and Decay

2014 T2, T2, T3, T4, T5
2015 T1, T2, T3, T4, T5
2016 T1, T2, T4, T5, T6, T7
2017 T1, T4, T5, T6, T7, T8, T22

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

A. Basic Physics of X-ray Beam Production

2014 T7, T8, T9, T10, T11
2015 T7, T9
2016 T8, T9, T10, T11
2017 T10, T11, T12, T13

B. Generation of Beams

2014 –
2015 T8, T10
2016 –
2017 T14

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

A. Linacs

2014 T12, T13, T14, T15, T17, T18
2015 T11, T12, T14, T15, T16, T17, T19
2016 T12, T15
2017 T15, T16, T18

B. Linac Collimation Systems and Other Teletherapy

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2015 T34
2016 T13, T16, T17
2017 T17, T20, T89

C. Simulators

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2015 –
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2017 T19, T65

4. RADIATION INTERACTIONS

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

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2015 T22, T23, T25, T27
2016 T18, T19, T21, T22
2017 T25, T26, T27, T28, T29, T30, T31, T40

B. Attenuation of Photon Beams

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2015 T20, T21, T26
2016 T24, T25, T26
2017 T23, T24, T32

C. Interactions of Particulate Radiation

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2017 –

5. RADIATION BEAM QUALITY AND DOSE

A. Monoenergetic and Polyenergetic Bremsstrahlung Beams

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2015 T30, T31
2016 T31
2017 –

B. Dose Quantities and Units

2014 T28, T29, T31
2015 –
2016 T28, T29
2017 T2

C. Relationships of Kerma, Dose, and Exposure

2014 T32
2015 T29, T32
2016 T30
2017 –

6. RADIATION MEASUREMENT AND CALIBRATION

A. Calculation of Dose

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2016 –
2017 T35, T38

B. Dose Output Calibration

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2015 T68
2016 T27, T37, T39
2017 T33, T34, T36, T37, T136

C. Clinical Dosimetry

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2015 T33, T35, T36, T37, T38, T39
2016 T32, T35, T36, T38
2017 –

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

A. External Beam Dosimetry Concepts (Pt. I)

2014 T42, T44, T45, T54
2015 T24, T40
2016 T14, T40, T42
2017 T42, T52

B. External Beam Dosimetry Concepts (Pt. II)

2014 T46, T51
2015 T41
2016 T33
2017 T43

C. System of Dose Calculations

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2015 T42, T47, T48, T51, T54, T56
2016 T43, T46, T47, T50, T51
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D. Translation of Computerized Planning

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2017 T44, T51, T57

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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2015 T59, T60, T61, T62, T63, T64
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9. EXTERNAL BEAM QUALITY ASSURANCE

A. Overview of QA in RT

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2015 –
2016 –
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B. Linac and Imaging QA

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2015 T65, T67
2016 T65, T66, T67, T68, T79
2017 T120, T121

10. INFORMATICS (DICOM, NETWORKING, PACS, DATA MANAGEMENT)

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2015 T70, T71
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11. RADIATION PROTECTION AND SHIELDING

A. Radiation Safety

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2016 T71, T74, T75
2017 T125

B. Radiation Shielding

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2015 T73, T75, T76
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2017 T123, T124, T126, T127

12. IMAGING FOR RADIATION ONCOLOGY

A. Radiography Fundamentals

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2015 –
2016 T34, T80
2017 –

B. CT and PET

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2015 T77, T86
2016 T78, T81, T83
2017 T67, T68, T70, T73, T78

C. MRI and Ultrasound (MRI Scanning)

2014 T85
2015 T80, T83, T85
2016 T86
2017 T66, T74, T75

D. Use of Imaging in Treatment Planning

2014 T87, T101
2015 T82, T84, T95
2016 T85, T112
2017 T72

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

- A. 3D-CRT Concepts; Volumetric vs. Non-volumetric**
 - 2014 T96, T97
 - 2015 T88, T89
 - 2016 T84, T87, T90, T91, T113
 - 2017 T69, T95
- B. Volumetric Beam Placement**
 - 2014 –
 - 2015 T90
 - 2016 T89, T92, T93
 - 2017 T21, T94
- C. Treatment Planning Methods**
 - 2014 T91, T93, T94, T95, T98
 - 2015 T91, T92, T93, T94
 - 2016 T82
 - 2017 –

14. ASSESSMENT OF PATIENT SETUP AND TREATMENT (+ EPID, IMMOBILIZATION, ETC.)

- A. Positioning and Immobilization Methods and Devices**
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 - 2015 T52, T99
 - 2016 T94, T95, T96, T98
 - 2017 T93
- B. Treatment Verification**
 - 2014 T100, T102
 - 2015 T96, T97, T98
 - 2016 T97
 - 2017 T76, T77, T79, T80, T81

15. IMRT

- A. IMRT Delivery Systems**
 - 2014 T104, T105, T108, T109, T111
 - 2015 T102, T103
 - 2016 T99, T101, T107
 - 2017 T85, T119
- B. Dose Prescription and Inverse Planning**
 - 2014 T106, T107, T110
 - 2015 T100, T101, T105, T107
 - 2016 T100, T102, T103
 - 2017 T86, T87, T91, T92
- C. IMRT QA**
 - 2014 –
 - 2015 T104, T106
 - 2016 T104, T105, T106
 - 2017 T88

16. SPECIAL PROCEDURES (+ RADIOSURGERY, TBI, ETC.)

- A. Delivery and Positioning**
 - 2014 –
 - 2015 T18, T108, T110, T112, T113, T115
 - 2016 –
 - 2017 T137, T138, T139

- B. SRS Dose Prescription and Planning, QA**
 - 2014 T115, T116, T117, T118
 - 2015 T66, T69, T111, T119
 - 2016 T111, T114
 - 2017 –
- C. Other Special Procedures**
 - 2014 T112, T113, T114
 - 2015 T109, T114
 - 2016 T108, T109, T110, T115
 - 2017 T97, T98, T100

17. BRACHYTHERAPY (+ INTRACAVITARY, INTERSTITIAL, HDR, ETC.)

- A. Radioactive Sources (General Information) and Calibration**
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 - 2015 T6, T122, T128, T130
 - 2016 T118, T129, T130
 - 2017 T103, T105, T107, T108, T109, T112, T113, T114, T115
- B. Calculations of Dose Distributions**
 - 2014 T122, T123, T130, T133
 - 2015 T124, T127
 - 2016 T119, T124, T125
 - 2017 T102, T111
- C. Implantation Techniques**
 - 2014 –
 - 2015 T120, T126, T129
 - 2016 T116, T117, T123, T126, T128
 - 2017 T116, T117
- D. Gynecological Implants/Insertions**
 - 2014 –
 - 2015 –
 - 2016 T121
 - 2017 T106
- E. Systems of Implant Dosimetry**
 - 2014 T124, T128, T129
 - 2015 –
 - 2016 –
 - 2017 –
- F. QA and Safety**
 - 2014 T126
 - 2015 T116, T117, T118, T121, T123, T125, T131
 - 2016 T120, T122, T127
 - 2017 T104, T110, T118

18. RADIOPHARMACEUTICAL PHYSICS AND DOSIMETRY

- A. Methods of Production and Clinical Treatments**
 - 2014 –
 - 2015 T132, T133
 - 2016 –
 - 2017 T99, T101
- B. Internal Dosimetry and Safety**
 - 2014 –
 - 2015 –
 - 2016 T131, T132, T133
 - 2017 –

19. HYPERTHERMIA

- A. Physics Aspects of Hyperthermia**
 - 2014 –
 - 2015 –
 - 2016 –
 - 2017 –
- B. External Superficial Electromagnetic Hyperthermia Applicators**
 - 2014 –
 - 2015 –
 - 2016 –
 - 2017 –
- C. Interstitial Electromagnetic Hyperthermia Applicators**
 - 2014 –
 - 2015 –
 - 2016 –
 - 2017 –
- D. Ultrasound Hyperthermia Systems**
 - 2014 –
 - 2015 –
 - 2016 –
 - 2017 –

20. PARTICLE THERAPY

- A. Cyclotrons and Synchrotrons**
 - 2014 T135
 - 2015 –
 - 2016 –
 - 2017 –
- B. Protons**
 - 2014 T66, T134, T136, T137, T139, T140
 - 2015 T134, T135, T136, T137, T138
 - 2016 T23, T134, T135, T136, T138
 - 2017 T131, T132, T133, T134, T135
- C. Neutrons**
 - 2014 T138
 - 2015 –
 - 2016 –
 - 2017 –
- D. Safety and Shielding for Protons and Neutrons**
 - 2014 –
 - 2015 –
 - 2016 –
 - 2017 –

21. RADIATION INCIDENTS AND BIOTERRORISM RESPONSE TRAINING

- 2014 –
- 2015 T139, T140
- 2016 T139, T140
- 2017 T128, T129, T130