



2019 THERAPY SUBJECT INDEX

Covering 2015–2018

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

2015 –
2016 T3
2017 T3, T9
2018 T3

B. Radioactivity and Decay

2015 T1, T2, T3, T4, T5
2016 T1, T2, T4, T5, T6, T7
2017 T1, T4, T5, T6, T7, T8, T22
2018 T1, T4, T5, T6, T8, T9

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

A. Basic Physics of X-ray Beam Production

2015 T7, T9
2016 T8, T9, T10, T11
2017 T10, T11, T12, T13
2018 T2, T12, T13

B. Generation of Beams

2015 T8, T10
2016 –
2017 T14
2018 T15

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

A. Linacs

2015 T11, T12, T14, T15, T16, T17, T19
2016 T12, T15
2017 T15, T16, T18
2018 T16, T17, T18, T22, T23

B. Linac Collimation Systems and Other Teletherapy

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2016 T13, T16, T17
2017 T17, T20, T89
2018 T19, T20, T21

C. Simulators

2015 –
2016 –
2017 T19, T65
2018 –

4. RADIATION INTERACTIONS

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

2015 T22, T23, T25, T27
2016 T18, T19, T21, T22
2017 T25, T26, T27, T28, T29, T30, T31, T40
2018 T7, T24, T26, T28, T29, T30, T31

B. Attenuation of Photon Beams

2015 T20, T21, T26
2016 T24, T25, T26
2017 T23, T24, T32
2018 T11, T14, T25, T27

C. Interactions of Particulate Radiation

2015 –
2016 –
2017 –
2018 –

5. RADIATION BEAM QUALITY AND DOSE

A. Monoenergetic and Polyenergetic Bremsstrahlung Beams

2015 T30, T31
2016 T31
2017 –
2018 T33

B. Dose Quantities and Units

2015 –
2016 T28, T29
2017 T2
2018 T32

C. Relationships of Kerma, Dose, and Exposure

2015 T29, T32
2016 T30
2017 –
2018 T49

6. RADIATION MEASUREMENT AND CALIBRATION

A. Calculation of Dose

2015 T13
2016 –
2017 T35, T38
2018 –

B. Dose Output Calibration

2015 T68
2016 T27, T37, T39
2017 T33, T34, T36, T37, T136
2018 T34, T37, T38

C. Clinical Dosimetry

2015 T33, T35, T36, T37, T38, T39
2016 T32, T35, T36, T38
2017 –
2018 T39, T40

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

A. External Beam Dosimetry Concepts (Pt. I)

2015 T24, T40
2016 T14, T40, T42
2017 T42, T52
2018 T35, T41, T42, T43, T46

B. External Beam Dosimetry Concepts (Pt. II)

2015 T41
2016 T33
2017 T43
2018 T50, T56

C. System of Dose Calculations

2015 T42, T47, T48, T51, T54, T56
2016 T43, T46, T47, T50, T51
2017 T45, T47, T48, T49, T50, T54, T58, T96
2018 T10, T53, T54, T55

D. Translation of Computerized Planning

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2016 T54, T55, T56, T57
2017 T44, T51, T57
2018 T48, T57, T118

E. Computerized Treatment Planning

2015 T44, T55, T58
2016 T20, T41, T44, T45, T49, T52, T88
2017 T41, T46, T56, T140
2018 T47, T52

F. Surface Corrections and Heterogeneity Calculations

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2016 T137
2017 T90
2018 T51

G. Adjoining Fields and Special Dosimetry Problems

2015 T45, T49, T53
2016 T48, T53
2017 T53, T55, T122
2018 T44, T45

8. ELECTRON BEAM CHARACTERISTICS AND PLANNING

A. Basic Characteristics

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2017 T39, T59, T60, T61, T63, T64
2018 T58, T61

B. Treatment Planning with Electrons

2015 T59, T60, T61, T62, T63, T64
2016 T63, T64
2017 T62
2018 T59, T60

9. EXTERNAL BEAM QUALITY ASSURANCE

A. Overview of QA in RT

2015 –
2016 –
2017 –
2018 T66

B. Linac and Imaging QA

2015 T65, T67
2016 T65, T66, T67, T68, T79
2017 T120, T121
2018 T62, T63, T64, T65, T67, T93, T115

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

2015 T70, T71
2016 T69, T70
2017 T71, T82, T83, T84
2018 T68, T69, T70

11. RADIATION PROTECTION AND SHIELDING

A. Radiation Safety

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2016 T71, T74, T75
2017 T125
2018 T72

B. Radiation Shielding

2015 T73, T75, T76
2016 T72, T73, T76, T77
2017 T123, T124, T126, T127
2018 T36, T74, T75, T76

12. IMAGING FOR RADIATION ONCOLOGY

A. Radiography Fundamentals

2015 –
2016 T34, T80
2017 –
2018 T82, T83, T85

B. CT and PET

2015 T77, T86
2016 T78, T81, T83
2017 T67, T68, T70, T73, T78
2018 T81, T87, T88, T89

C. MRI and Ultrasound (MRI Scanning)

2015 T80, T83, T85
2016 T86
2017 T66, T74, T75
2018 T84, T86, T119

D. Use of Imaging in Treatment Planning

2015 T82, T84, T95
2016 T85, T112
2017 T72
2018 T80, T95, T96, T97

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

- A. 3D-CRT Concepts; Volumetric vs. Non-volumetric**
 - 2015 T88, T89
 - 2016 T84, T87, T90, T91, T113
 - 2017 T69, T95
 - 2018 T90
- B. Volumetric Beam Placement**
 - 2015 T90
 - 2016 T89, T92, T93
 - 2017 T21, T94
 - 2018 –
- C. Treatment Planning Methods**
 - 2015 T91, T92, T93, T94
 - 2016 T82
 - 2017 –
 - 2018 –

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

- A. Positioning and Immobilization Methods and Devices**
 - 2015 T52, T99
 - 2016 T94, T95, T96, T98
 - 2017 T93
 - 2018 T91, T94, T106
- B. Treatment Verification**
 - 2015 T96, T97, T98
 - 2016 T97
 - 2017 T76, T77, T79, T80, T81
 - 2018 T92

15. IMRT

- A. IMRT Delivery Systems**
 - 2015 T102, T103
 - 2016 T99, T101, T107
 - 2017 T85, T119
 - 2018 T98
- B. Dose Prescription and Inverse Planning**
 - 2015 T100, T101, T105, T107
 - 2016 T100, T102, T103
 - 2017 T86, T87, T91, T92
 - 2018 T99, T100, T101, T102, T103, T104
- C. IMRT QA**
 - 2015 T104, T106
 - 2016 T104, T105, T106
 - 2017 T88
 - 2018 –

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

- A. Delivery and Positioning**
 - 2015 T18, T108, T110, T112, T113, T115
 - 2016 –
 - 2017 T137, T138, T139
 - 2018 T73
- B. SRS Dose Prescription and Planning, QA**
 - 2015 T66, T69, T111, T119
 - 2016 T111, T114
 - 2017 –
 - 2018 T105, T113, T114, T116, T117
- C. Other Special Procedures**
 - 2015 T109, T114
 - 2016 T108, T109, T110, T115
 - 2017 T97, T98, T100
 - 2018 T107, T108, T112

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

- A. Radioactive Sources (General Information) and Calibration**
 - 2015 T6, T122, T128, T130
 - 2016 T118, T129, T130
 - 2017 T103, T105, T107, T108, T109, T112, T113, T114, T115
 - 2018 T110, T111, T120, T123, T127, T128
- B. Calculations of Dose Distributions**
 - 2015 T124, T127
 - 2016 T119, T124, T125
 - 2017 T102, T111
 - 2018 T109, T121, T134, T135
- C. Implantation Techniques**
 - 2015 T120, T126, T129
 - 2016 T116, T117, T123, T126, T128
 - 2017 T116, T117
 - 2018 T122, T124, T131, T132
- D. Gynecological Implants/Insertions**
 - 2015 –
 - 2016 T121
 - 2017 T106
 - 2018 T130
- E. Systems of Implant Dosimetry**
 - 2015 –
 - 2016 –
 - 2017 –
 - 2018 –
- F. QA and Safety**
 - 2015 T116, T117, T118, T121, T123, T125, T131
 - 2016 T120, T122, T127
 - 2017 T104, T110, T118
 - 2018 T125, T126, T129, T133

18. RADIOPHARMACEUTICAL PHYSICS AND DOSIMETRY

- A. Methods of Production and Clinical Treatments**
 - 2015 T132, T133
 - 2016 –
 - 2017 T99, T101
 - 2018 T71
- B. Internal Dosimetry and Safety**
 - 2015 –
 - 2016 T131, T132, T133
 - 2017 –
 - 2018 –

19. HYPERTHERMIA

- A. Physics Aspects of Hyperthermia**
 - 2015 –
 - 2016 –
 - 2017 –
 - 2018 –
- B. External Superficial Electromagnetic Hyperthermia Applicators**
 - 2015 –
 - 2016 –
 - 2017 –
 - 2018 –
- C. Interstitial Electromagnetic Hyperthermia Applicators**
 - 2015 –
 - 2016 –
 - 2017 –
 - 2018 –
- D. Ultrasound Hyperthermia Systems**
 - 2015 –
 - 2016 –
 - 2017 –
 - 2018 –

20. PARTICLE THERAPY

- A. Cyclotrons and Synchrotrons**
 - 2015 –
 - 2016 –
 - 2017 –
 - 2018 –
- B. Protons**
 - 2015 T134, T135, T136, T137, T138
 - 2016 T23, T134, T135, T136, T138
 - 2017 T131, T132, T133, T134, T135
 - 2018 T136, T137, T138, T139, T140
- C. Neutrons**
 - 2015 –
 - 2016 –
 - 2017 –
 - 2018 –
- D. Safety and Shielding for Protons and Neutrons**
 - 2015 –
 - 2016 –
 - 2017 –
 - 2018 –

21. RADIATION INCIDENTS AND BIOTERRORISM RESPONSE TRAINING

- 2015 T139, T140
- 2016 T139, T140
- 2017 T128, T129, T130
- 2018 T77, T78, T79