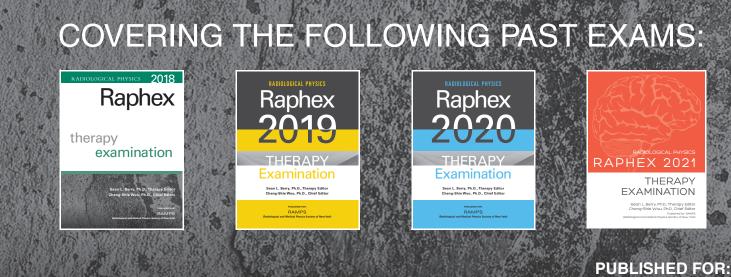
RADIOLOGICAL PHYSICS

Raphex Index

2022 Therapy



RAMPS Radiological and Medical Physics Society of New York



2022 THERAPY SUBJECT INDEX Covering Years 2018–2021

This subject index for the Raphex Therapy Examination booklets is arranged by year and question number (TI-TI40).

- I. ATOMIC AND NUCLEAR **STRUCTURE (+ DECAY AND** RADIOACTIVITY)
- The Atom
- 2018 T3 2019 T5, T6 2020 T8 2021 T2, T4
- **Radioactivity and Decay** 2018 T1, T4, T5, T6, T8, T9 2019 T3, T4, T7, T112 2020 T4, T5, T6, T7 2021 T6, T7, T8, T123
- 2. PRODUCTION OF X-RAYS PHOTONS, AND ELECTRONS
- **Basic Physics of X-ray Beam Production** 2018 T2, T12, T13 2019 T8, T9, T10, T19, T20 2020 T2, T11 2021 T9, T12, T13, T15, T26, T42

Generation of Beams R.

- 2018 T15 2019 T11, T12, T13 2020 T12, T13 2021 -
- 3. TREATMENT MACHINES AND **GENERATORS; SIMULATORS** (+ CT)
- A. Linacs 2018 T16, T17, T18, T22, T23 2019 T14, T15 2020 T1, T9, T14, T18, T21 552 T3 T16, T17, T19, T20, 2021 T3, T16, T17, T19, T20, T46, T60
- Linac Collimation Systems and Other В.
 - Teletherapy

 2018
 T19, T20, T21

 2019
 T16, T17, T21

 2020
 T15, T16, T41

 2021
 T14, T18, T21, T49, T50
- C. Simulators
 - 2018 2019 T24 2020 -2021 -
- 4. RADIATION INTERACTIONS Α.
- Interactions of X-rays and Gamma Rays with Matter 2018 T7, T24, T26, T28, T29, T30, T31 2019 T28, T29, T30 2020 T23, T27, T28, T29, T31 2021 T5, T11, T22, T27, T28, T29
- **Attenuation of Photon Beams**
 - 2018 T11, T14, T25, T27 2019 T22, T23, T26, T27, T32 2020 T26 2021 T31, T74
- C. Interactions of Particulate Radiation 2018 – 2019 –
 - 2020 T25 2021 T23, T24, T25

- 5. RADIATION BEAM QUALITY AND DOSE Monoenergetic and Polyenergetic Bremsstrahlung Beams Α.
- - 2018 T33 2019 -
 - 2020 2021 TIO
- **Dose Quantities and Units** Β.
 - 2018 T32 2019 T31 2020 T3, T32

 - 2021 TI, T30, T32, T43
- Relationships of Kerma, Dose, and Exposure 2018 T49 2019 T1, T2 2020 T30 2021

6. RADIATION MEASUREMENT AND CALIBRATION Α.

- Calculation of Dose 2018 – 2019 T36 2020 T68
 - 2021 T37
- **Dose Output Calibration** 2018 T34, T37, T38 2019 В. 2020 T33, T34, T36, T38, T39, T42, T67 2021 T36, T40
- C. Clinical Dosimetry 2018 T39, T40 2019 T33, T35, T37, T38, T39, T40 2020 T35, T37, T40 2021 T33, T34, T35, T39
- 7. PHOTONS AND X-RAYS (+ CONCEPTS, ISODOSES, MU, HETEROGENEITIES, FIELD SHAPING, COMPENSA-TION, FIELD MATCHING, ETC.)
- A. External Beam Dosimetry Concepts (Pt. I) 2018 T35, T41, T42, T43, T46 2019 T43, T44, T45, T59 2020 T20, T48 2021 T38, T45, T51, T52
- **External Beam Dosimetry Concepts** (Pt. II) 2018 T50, T56 2019 T108 2020 -2021 -
- C. System of Dose Calculations 2018 T10, T53, T54, T55 2019 T34, T46, T54, T55, T56 2020 T43, T44, T50, T53, T56, T57, T58, T108 2021 T44, T48, T53, T55, T56, T57, T58
- **Translation of Computerized Planning** 2018 T48, T57, T118 2019 T49, T109 D. 2020 T45 2021 -

- E. **Computerized Treatment Planning** 2018 T47, T52 2019 T51, T52, T53, T58, T60 2020 T49, T51
 - 2021 T41, T54
- E. Surface Corrections and Heterogeneity Calculations
 - 2018 T51 2019 T57
 - 2020 T47 2021 T47
- G. Adjoining Fields and Special Dosimetry Problems 2018 T44, T45 2019 T47, T48 2020 T52, T54, T55 2021 T59

8. ELECTRON BEAM **CHARACTERISTICS** AND PLANNING

- **Basic Characteristics** А. 2018 T58, T61 2019 T25, T61, T62, T64 2020 T24, T60, T63, T64 2021 T62, T63
- **Treatment Planning with Electrons** В. 2018 T59, T60 2019 T63, T65 2020 T59, T61, T62 2021 T61, T64, T65, T66, T67

9. EXTERNAL BEAM QUALITY ASSURANCE

- Overview of QA in RT Α. 2018 T66 2019 -2020 2021 T73
- Linac and Imaging QA 2018 T62, T63, T64, T65, T67, T93, T115 2019 T41, T66, T67, T68, T69, T71 2020 T66, T69, T70 2021 T68, T69, T70, T71, T88, T89 В.

10. INFORMATICS (DICOM, NETWORKING, PACS, DATA MANAGEMENT) 2018 T68, T69, T70

2019 -2020 T71, T72 2021 T72

11. RADIATION PROTECTION AND SHIELDING

- **Radiation Safety** Α. 2018 T72 2019 -2020 T73, T74, T75 2021 T75, T76, T127
- **Radiation Shielding** Β.
 - 2018 T36, T74, T75, T76 2019 T77, T78, T79 2020 T76, T77, T78, T79 2021 T77, T78, T79

- **12. IMAGING FOR RADIATION ONCOLOGY** A. Radiography Fundamentals
- 2018 T82, T83, T85 2019 T42, T73, T74, T89 2020 T65, T80, T94, T96 2021 T80, T81, T82
- В. CT and PET 2018 T81, T87, T88, T89 2019 T80, T84, T85, T86, T87, T94, T98 2020 T10, T85, T86, T87, T88, T89, T97 2021 T84, T86, T87, T95
- C. MRI and Ultrasound (MRI Scanning) 2018 T84, T86, T119 2019 T18, T81, T83, T88, T93 2020 T81, T82, T83 2021 T83, T85
- **Use of Imaging in Treatment Planning** 2018 T80, T95, T96, T97 2019 T82 D. 2020 T92, T93, T120 2021 -
- 13.3D-CRT (INCLUDING ICRU CONCEPTS AND BEAM-**RELATED BIOLOGY**) Α.
- 3D-CRT Concepts; Volumetric vs. Non-volumetric 2018 T90 2019 T90 2020
 - 2021 T91
- **B**. Volumetric Beam Placement
 - 2018 -2019 T50, T92, T99, T100 2020
 - 2021 T90, T92, T93
- C. Treatment Planning Methods
 - 2018 2019 -
 - 2020
 - 2021 T94
- **14. ASSESSMENT OF PATIENT** SETUP AND TREATMENT (+ EPID, IMMOBILIZATION, ÈTC.)
- A. Positioning and Immobilization Methods and Devices 2018 T91, T94, T106 2019 T72, T95, T96 2020 T17, T46, T84
 - 2021 T96, T97, T98
- **Treatment Verification** Β.

2018 T92 2019 T70, T91, T97 2020 T95, T98 2021

15. IMRT

A. IMRT Delivery Systems

- 2018 T98 2019 T101, T102, T104 2020 T19, T22, T102 2021 TI01, TI04, TI05
- **Dose Prescription and Inverse Planning** Β. 2018 T99, T100, T101, T102, T103, T104 2019 T105, T113, T114 2020 T90, T91, T100, T106, T107 2021 T99, T100, T103, T106
- C. IMRT QA
 - 2018 -2019 T103, T106, T107 2020 TI01, TI03, TI04, TI05 2021 TI02

(+ RADIOSURGERY, TBI, ETC.) Delivery and Positioning Α. 2019 -2020 T99, TII3, TII4 2021 TII3 Β. SRS Dose Prescription and Planning, QA 2018 T105, T113, T114, T116, T117 2019 T115, T116, T117 2020 T115, T116, T117 2021 T112, T114, T115, T116 **Other Special Procedures** С. 2018 T107, T108, T112 2019 T110 2020 T109, T111, T112 2021 T107, T108, T110 **17. BRACHYTHERAPY** (+ INTRACAVITARY, ÌNTERSTITIAL, HDR, ETC.) A. Radioactive Sources (General Information) and Calibration 2018 T110, T111, T120, T123, T127, T128 2019 T75, T76, T111, T119 2020 T121, T132 2021 T109, T120, T131, T132 Β. **Calculations of Dose Distributions** 2018 T109, T121, T134, T135 2019 T124, T125, T126, T127, T131 2020 T118, T123, T124, T125, T128, T129, T130 2021 T117, T122, T128, T129 Implantation Techniques С. 2018 T122, T124, T131, T132 2019 T120, T128, T129, T130 2020 T119, T126 2021 T121, T124, T125, T126, T130 **Gynecological Implants/Insertions** D. 2018 T130 2019 T122 2020 T127 2021 T118, T119 Systems of Implant Dosimetry E. 2018 – 2019 – 2020 2021 -**QA and Safety** 2018 T125, T126, T129, T133 2019 T118, T121, T123, T132, T138 E. 2020 T122, T131, T133 2021 -**18. RADIOPHARMACEUTICAL** PHYSICS AND DOSIMETRY Methods of Production and Clinical Α. Treatments 2018 T71 2019 -2020 TII0 2021 TIII Internal Dosimetry and Safety Β. 2018 – 2019 –

2020 2021

16. SPECIAL PROCEDURES

- **19. HYPERTHERMIA**
- Α. **Physics Aspects of Hyperthermia** 2018 -
 - 2019 -2020 -
 - 2021
- Β. **External Superficial Electromagnetic** Hyperthermia Applicators
 - 2018 -2019 -
 - 2020 -
 - 2021 -
- Interstitial Electromagnetic С. Hyperthermia Applicators 2018 -
 - 2019
 - 2020 -
 - 2021 -
- **Ultrasound Hyperthermia Systems** D. 2018 -
 - 2019 2020 -
- - 2021

20. PARTICLE THERAPY

- A. Cyclotrons and Synchrotrons 2018 -2019
 - 2020
 - _ 2021
- В. Protons

2018 T136, T137, T138, T139, T140 2019 T133, T134, T135, T136, T137 2020 T134, T135, T136, T137, T138 2021 T133, T134, T135, T136, T137

- C. Neutrons
 - 2018 2019 2019
 - 2020
 - 2021 -

D. Safety and Shielding for Protons and Neutrons

- 2018 -
- 2019 -2020 _
- 2021 -

21. RADIATION INCIDENTS AND BIOTERRORISM RESPONSE TRAINING

2018 T77, T78, T79 2019 T139, T140 2020 T139, T140 2021 T138, T139, T140