

SAUDI BOARD RESIDENCY TRAINING PROGRAM

RADIOLOGY TECHNOLOGY

Part One Examination

Examination Format:

1. Part I Examination of Saudi board certificate shall consist of one paper with 150 multiple-choice questions (single best answer out of four options). Up to 10% unscored items can be added for pretesting purposes.
2. If any other assessment format is used, the Central Assessment Committee must agree to its implementation.

Passing Score:

1. The passing score is 65%.
2. If the percentage of candidates passing the exam before final approval is less than 70%, the passing score can be lowered by one mark at a time aiming at achieving 70% passing rate or a score of 60% whichever comes first. Under no circumstances, may the score can be reduced below 60%.

Suggested References:

- *Physics in Nuclear Medicine* by Simon R. Cherry and James A. Sorenson

Text Books

1. **Fundamental Nuclear Pharmacy** by Gopal B. Saha
2. **Physics in Nuclear Medicine** by Simon R. Cherry and James A. Sorenson

Useful links:

1. <http://jnm.snmjournals.org>
2. www.eanm.org

General

- Getting Started in Clinical Radiology: From Image to Diagnosis, Paperback, 2005, by George W. Eastman. Thieme.
- Radiologic Science for Technologists: Physics, Biology, and Protection, Hardcover, 11th edition, by Stewart C. Bushong. Mosby.
- Radiography: Technology, Environment, Professionalism. Paperback, 1998, by Frances E. Campeau. Lippincott Williams & Wilkins.
- The Practice of Radiology Education: Challenges and Trends. Hardcover, 2009, by Teresa van Deven. Springer-Verlag Berlin Heidelberg.
- The Essential Physics of Medical Imaging, Hardcover, 3rd Edition, by Jerrold T. Bushberg. Lippincott Williams & Wilkins.
- Patient Care in Radiography: With an Introduction to Medical Imaging, Paperback, 9th Edition, by Ruth A. Ehrlich. Mosby.

CT

- Computed Tomography for Technologists: A Comprehensive Text, 2018, by Lois E. Romans. Lippincott Williams & Wilkins.
- Computed Tomography: Physical Principles, Clinical Applications, and Quality Control. Paperback, 3rd Edition, by Euclid Seeram. Saunders.
- Computed Tomography, Paperback, 1st edition, by Stewart C. Bushong. McGraw-Hill Education.
- Computed Tomography for Technologists: Exam Review. Paperback, 1st edition, by Lois E. Romans. Lippincott Williams & Wilkins.
- CT & MRI Pathology: A Pocket Atlas. Paperback, 1st edition, by Michael L. Grey and Jagan M. Ailinani. McGraw-Hill Education.

X-ray

- Bontrager's Handbook of Radiographic Positioning and Techniques. Spiral-bound, 8th edition, by Kenneth L. Bontrager. Mosby.
- Clark's Positioning in Radiography. Hardcover, 13th edition, by Stewart Whitley. CRC Press.
- Radiographic Pathology for Technologists. Paperback, 6th edition, by Nina Kowalczyk. Mosby.

MRI

- Handbook of MRI Technique. Paperback, 4th edition, by Catherine Westbrook. Wiley-Blackwell.
- MRI in Practice, Paperback, 5th edition, by Catherine Westbrook. Wiley-Blackwell.
- Handbook of MRI Scanning. Spiral-bound, 1st edition, by Geraldine Burghart Mosby.
- MRI Parameters and Positioning, Paperback, 2nd edition, by Torsten B. Möller. TPS.
- CT & MRI Pathology: A Pocket Atlas. Paperback, 1st edition. by Michael L. Grey. McGraw-Hill.



US

- Ultrasound Scanning: Principles and Protocols. 4th edition, by Betty Bates Tempkin. Saunders.
- Workbook for Textbook of Diagnostic Sonography paperback, 8th edition, by Sandra L. Hagen–Ansert. Mosby.
- Sonography: Introduction to Normal Structure and Function. Paperback, 4th edition, by Betty Tempkin and Reva Arnez Curry. Saudners.

NM

- Nuclear Medicine and PET/CT: Technology and Techniques. Hardcover, 7th edition, by Paul E. Christian. Mosby.
- Nuclear Medicine Physics: The Basic. Paperback, 7th edition, by Ramesh Chandra. Lippincott Williams & Wilkins.
- Fundamentals of Nuclear Pharmacy. Hardcover, 7th edition, by Gopal B. Saha. Springer.
- PET/MRI: Methodology and Clinical Applications. Paperback, 1st edition, by Ignasi Carrio, and Pablo R. Ros. Springer.

Note:

This list is intended for use as a study aid only. SCFHS does not intend the list to imply endorsement of these specific references, nor are the exam questions necessarily taken solely from these sources.

Blueprint Outlines:

No.	Sections	Percentage (%)	Medical Science	Management	Investigation	Assessment/ Diagnosis
1	Radiation Protection	8%	9	5	0	0
2	X-Ray	25%	8	12	5	5
3	Angiography	10%	4	5	3	3
4	Fluoroscopy	10%	3	4	4	4
5	Ultrasound	10%	3	6	3	3
6	MRI	10%	3	3	4	5
7	CT	10%	3	3	4	5
8	Nuclear Medicine	9%	4	5	3	3
9	Patient Safety	4%	0	8	0	0
10	Research, Ethics and Professionalism	4%	0	8	0	0
Total			100%			

Note:

- Blueprint distributions of the examination may differ up to +/-5% in each category.
- Percentages and content are subject to change at any time. See the SCFHS website for the most up-to-date information.

MEDICAL SCIENCES:

Focuses on a comprehensive theoretical and practical knowledge of basic principles and applied physics of different medical imaging equipment, including different imaging artifact besides being familiar with PACS.

INVESTIGATION:

Acquiring a wide knowledge of clinical history, indication and contraindications of different radiological procedures and takes into consideration associated risks and benefits in addition to the optimized way of patient care and patient preparation.

MANAGEMENT:

Focuses on the best practice to perform radiological procedures, patient safety, and radiation safety when examining patients with various clinical conditions, particularly in emergency, in addition to basic skills acquired of imaging interpretation.

DIAGNOSIS:

Focuses on medical imaging protocols and the best radiological modality consisting of clinical reasoning. In addition, using the best techniques for accurately positioning patients and ensuring that a quality diagnostic image is produced. Moreover, acquiring adequate knowledge and skills to judge medical imaging with respect to the normal and abnormal findings.



Example Questions

EXAMPLE OF K2 QUESTIONS

Question 1

A woman patient is referred with right upper quadrant pain and tenderness. She has a history of oral contraceptive use. A solid, hypoechoic mass is identified in the right lobe of the liver (see report).

Color Doppler

Hypervascularity of the mass.

Which of the following is the most likely diagnosis?

- A. Hepatic cyst
- B. Hepatic lipoma
- C. Hepatic abscess
- D. Hepatic adenoma

EXAMPLE OF K1

Question 2

Which of the following is the commonest artefact associated with simple back projection?

- A. Ring
- B. Star edge
- C. Partial volume
- D. Beam hardening