



SAUDI BOARD RESIDENCY TRAINING PROGRAM

MEDICAL PHYSICS FOR NUCLEAR MEDICINE

Promotion Written Examination

Written Examination Format:

- A written examination shall consist of one paper with not less than 100 MCQs with a single best answer (one correct answer out of four options). Up to 10% unscored items can be added for pretesting purposes.
- The examination shall contain type K2 questions (interpretation, analysis, reasoning and decision making) and type K1 questions (recall and comprehension).
- The examination shall include basic concepts and clinical topics relevant to the specialty.
- Clinical presentation questions include history, clinical finding and patient approach. Diagnosis and investigation questions; include the possible diagnosis and diagnostic methods. Management questions; including treatment and clinical management, either therapeutic or nontherapeutic, and complications of management. Materials and Instruments questions; including material properties, usage, and selection of instruments and equipment used. Health maintenance questions; include health promotion, disease prevention, risk factors assessment, and prognosis.





Passing Score:

The trainee's performance is assessed in each of the evaluation formulas according to the following scoring system:

Score	Less than 50%	50% – 59.4%	60% - 69.4%	More than 70%
Descriptio	Clear Fail	Borderline Fail	Borderline Pass	Clear Pass

1. To upgrade the trainee from a training level to the next level, she/he must obtain at least a **Borderline Pass** in each evaluation form.

2. The program director may recommend to the local supervision committee to request the promotion of the trainee who did not meet the previous promotion requirement according to the following:

A. In case that the trainee gets a **Borderline Fail** result in **one** of the evaluation forms, the remaining evaluation forms must be passed with **Clear Pass** in at least **one** of them.

B. In case that the trainee gets a **Borderline Fail** result in **two** of the evaluation forms to a maximum, provided they do not fall under the same theme (Knowledge, Attitude, Skills). The remaining evaluation forms must be passed with Clear Pass in at least two of them.

C. The promotion must be approved in this case by the scientific council for the specialization.





Suggested References:

1. Cherry, S. R., Sorenson, J. A., Phelps, M. E., & ScienceDirect (Online service). (2003). Physics in nuclear medicine (Vol. 3). Saunders.
2. International Commission on Radiological Protection. (2007). Radiological protection in medicine (ICRP Publication 105). Annals of the ICRP, 37(6).
3. International Atomic Energy Agency. (2018). Radiation protection and safety in medical uses of ionizing radiation (Safety Reports Series). International Atomic Energy Agency.
4. Meghzifene, A., & Sgouros, G. (2013, May). IAEA support to medical physics in nuclear medicine. In Seminars in Nuclear Medicine (Vol. 43, No. 3, pp. 181-187). WB Saunders.
5. AlMutairi, N. (2023, March 19). Saudi Arabia. NuclearMed. Retrieved December, 2025, from <https://nuclearmed.org/saudi-arabia/>
6. Sandler, M. P. (Ed.). (2003). Diagnostic nuclear medicine. Lippincott Williams & Wilkins.
7. Frank, J. R., Snell, L., Sherbino, J., & Boucher, A. (2015). CanMEDS 2015. Physician competency framework series I.
8. Beal, M. D., Kinnear, J., Anderson, C. R., Martin, T. D., Wamboldt, R., & Hooper, L. (2017). The effectiveness of medical simulation in teaching medical students critical care medicine: a systematic review and meta-analysis. *Simulation in Healthcare*, 12(2), 104–116.
9. Cook, D. A., Erwin, P. J., & Triola, M. M. (2010). Computerized virtual patients in health professions education: a systematic review and meta-analysis. *Academic Medicine*, 85(10), 1589–1602.
10. Cook, D. A., Hatala, R., Brydges, R., Zendejas, B., Szostek, J. H., Wang, A. T., ... & Hamstra, S. J. (2011). Technology-enhanced simulation for health professions education: a systematic review and meta-analysis. *Jama*, 306(9), 978–988.
11. Lynagh, M., Burton, R., & Sanson-Fisher, R. (2007). A systematic review of medical skills laboratory training: where to from here? *Medical Education*, 41(9), 879–887.





12. So, H. Y., Chen, P. P., Wong, G. K. C., & Chan, T. T. N. (2019). Simulation in medical education. *Journal of the Royal College of Physicians of Edinburgh*, 49(1), 52–57.

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.	Section	Percentage
1	Radiological Physics & Radioactivity	20%
2	Principles of Imaging	20%
3	Radiation Therapy Physics	10%
4	Anatomy and Physiology	10%
5	Radiobiology	15%
6	Informatics & Ethics	15%
7	Research Methodology	10%
Total		100%

Notes:

- 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.
- Research, Ethics, Professionalism, and Patient Safety are incorporated within various domains.

