1. True or False – There is a threshold dose for cancer, and when exceeded, you will have cancer.

2. The threshold for cataract production following acute radiation exposure is:
   A. 2 Gy (200 rad)
   B. 4 Gy (400 rem)
   C. 10 Gy (1000 rad)

3. The annual natural background (including radon) in the U.S. is approximately:
   A. 1 mSv (100 mrem)
   B. 2 mSv (200 mrem)
   C. 3 mSv (300 mrem)
   D. 6 mSv (600 mrem)

4. Under typical conditions, what is the interventional procedure which will result in the highest mean effective dose to the patient?
   A. Upper Extremity Angio
   B. Abdominal Angio
   C. PTC
   D. TIPS

5. Which of the following precautions will reduce patient radiation exposure during fluoroscopy?
   A. Minimizing the use of CINE
   B. Minimizing frame rate
   C. Utilizing collimation
   D. Varying image beam angle to minimize any single skin area exposure
   E. All of the above are appropriate precautions to reduce patient dose

6. In the State of Maryland who is permitted to energize fluoroscopic x-rays systems on humans?
   A. Licensed physicians
   B. Licensed, credentialed physicians or registered x-ray technologists that have completed 4 hours of initial training and 1 hour of continuing education every 24 months
   C. Anyone trained to do so
   D. Doctors, nurses, and registered x-ray technologists

7. What is the threshold dose for skin injury?
   A. There is no threshold
   B. 1 Gy (100 rad)
   C. 2 Gy (200 rad)
   D. 5 Gy (500 rad)
8. What is a typical (median) entrance skin exposure rate to the patient during fluoroscopy when using a mobile C-arm?
   A. 1.0 R/min
   B. 2.3 R/min
   C. 3.5 R/min
   D. 10 R/min

9. When you use a fluoroscope the appropriate orientation of the patient is:
   A. patient as close as possible to the x-ray tube
   B. patient as close as possible to the image intensifier
   C. patient in middle between the x-ray tube and the image intensifier
   D. both A and B

10. Using magnification mode in fluoroscopy (image intensifier machines) excluding digital zoom capability:
    A. always decreases patient exposure
    B. always increases patient exposure

11. The major source of radiation to the staff during fluoroscopy is:
    A. the patient
    B. the x-ray tube
    C. the collimator
    D. the image intensifier

12. Standing on which side of the patient during lateral fluoroscopy will reduce the scattered radiation to the staff.
    A. Tube side
    B. Image intensifier side

13. Individual A is 1 step away from a patient during fluoroscopy, individual B is 4 steps away.
    What is individual B’s exposure relative to person A?
    A. 100% of A
    B. 25% of A
    C. 11% of A
    D. 6% of A

14. A 0.5 mm thick lead apron attenuates 90 kVp scattered x-rays by a factor of:
    A. 90%
    B. 50%
    C. 10%
    D. 1%
15. A suspend lead shield is an important primary protective measure for which body part?
   A. Whole body
   B. Thyroid
   C. Lens of the eye

16. The annual whole body occupational dose limit is?
   A. 50 mrem (0.5 mSv)
   B. 500 mrem (5 mSv)
   C. 5,000 mrem (50 mSv)
   D. 50,000 mrem (500 mSv)
   E. 500 mSv (50 rem)

17. What is the annual occupational dose limit to an employee’s eye?
   A. 500 mrem (5 mSv)
   B. 5,000 mrem (50 mSv)
   C. 15,000 mrem (150 mSv)
   D. 50,000 mrem (500 mSv)

18. Where should the personnel radiation monitor be worn if only one is available?
   A. Under the protective apron at waist level
   B. Outside the protective apron at waist level
   C. Outside the protective apron on the collar

19. Which of the following is one of the four important steps a physician/technologist can take to protect oneself while working in radiation areas?
   A. Reduce time around radiation
   B. Increase distance from radiation source (patient)
   C. Utilize all available shielding
   D. Wear his/her dosimeter properly and regularly
   E. All the above

20. Your year to date collar badge reading is 1250 mrem. Utilizing the MDE approved EDE1 calculation, the assigned whole body radiation dose will be?
   A. 1250 mrem
   B. 375 mrem
   C. 88 mrem
   D. M (minimal)

Return completed quiz before January 31, 2014 to:

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