RUTGERS
THE STATE UNIVERSITY
OF NEW JERSEY

Rutgers Environmental Health & Safety
Radiation Safety Refresher
Knowledge Assessment

Name: _____ Date: _____

E-Mail:_____ Phone #: _____

Name of the Licensee: _____ Department: _____

Select the box for the best answer to the choices given for each question. Please submit the completed pages by e-mail or to the Office of Radiation Safety Services directly.

1. **According to ALARA concept:**

   a) Non-occupationally exposed persons should not receive any radiation exposure.
   b) The dose received by radiation workers should be as low as possible.
   c) The doses received by technicians should not be of concern to the investigator.
   d) A pregnant radiation worker should not receive any radiation exposure.

2. **When working with radioactive materials, the following personal protective equipment is required:**

   a) Lab coat
   b) Gloves
   c) Shoes without open toes
   d) Safety glasses or equivalent eye protection
   e) All of the above
   f) None required if using ^{14}C or ^{3}H

3. **The Liquid Scintillation Counter (LSC) is old and not working properly. You have decided to dispose of the. LSC. Arrange disposal through:**

   a) Asset management
   b) Roll it to the loading dock and leave it there
   c) Office of Radiation Safety Services, Asset Management, and Housekeeping (movers)
   d) Housekeeping (movers)
   e) Asset management and Housekeeping (movers)

4. **In accordance with the Federal (NRC) and State (NJDEP) agencies, the annual maximum permissible dose to the whole body for a radiation worker is:**

   a) 500 mR
   b) 7500 mR
   c) 5000 mR
   d) 1250 mR
   e) 5 mR

5. LSC or a gamma counter is used to analyze the laboratory wipes. These counters print all the data in Counts per Minute (CPM). As per the NRC and NJDEP regulations, all CPM must be converted to Disintegrations Per Minute (DPM). The following formula is used to convert CPM into DPM:

a) CPM= DPM
b) Gross CPM - Background CPM = Net DPM
c) Gross CPM - Background CPM = Net CPM
d) Net DPM/Efficiency for that radionuclide
e) Net CPM/Efficiency for that radionuclide
f) B&D
g) C&E
h) C&D

6. The purpose of wearing a film badge is

a) to identify the person as a radioactive material user
b) to protect the person from unnecessary radiation in the lab
c) to detect and measure radiation exposure
d) to get unlimited access to radiation work area

7. The radioactive material stock vials are locked in a box that is secured to the refrigerator. when no personnel are present in the lab, which of the following is true:

a) Lab door may be left open.
b) The refrigerator door must be locked
c) The lab door must be locked.
d) At least one authorized person must be present at all times.
e) None of the above

8. All requisitions for purchase of radioactive material must be approved by the

a) Department Chairman, and sent to Purchasing Department
b) Principal Investigator, and sent to Purchasing Department
c) User, Principal Investigator, and Purchasing Department
d) User, Principal Investigator, and Office of Radiation Safety Services prior to submitting to the Purchasing Department
e) All the above

9. _____ colored bags must be used to collect radioactive waste.

a) Red
b) White
c) Black
d) Green
e) Blue
f) Any

10. What procedures must be performed to determine that a portable GM survey meter is working properly:

a) Perform battery test
b) Locate and note check source reading in mR/hr or CPM on calibration certificate
c) Select appropriate meter scale (100x, l0x, lx, or 0.1x etc.)
d) Open check source cover; if any, and place probe against it
e) Note meter reading in mR/hr or CPM
f) Compare with the calibrated value
g) If the value differs by +/- 10% contact Office of Radiation Safety Services(ORSS)
h) All of the above
i) Only A and B and proceed to survey

11. A spill of radioactive ^{32}P occurs while you are conducting an experiment. Your response should be as follows:

a) Cover with absorbent paper, leave the laboratory and ask a friend to call Office of Radiation Safety Services
b) Inform your supervisor and leave
c) Call the Office of Radiation Safety Services and leave
d) Notify lab staff, contain the spill, and secure the area. Call the Office of Radiation Safety Services, and wait until ORSS staff arrives.
e) Notify lab staff, contain the spill, and secure the area. Call the Office of Radiation Safety Services, and leave.

12. Protein labeling with ^{125}I (Iodination) is performed only in the hood located at:

a) Radiation Research Services - MSB F-451
b) Radiation Safety Services - MSB A-679
c) Radiology Services - UH C-321
d) Nuclear Medicine Services - UH H-141
e) In your laboratory hood

13. Radioactive material users ensure that each container of radioactive material must bear the following symbol:


(a)


(b)


(c)


(d)


(e)

14. When auditing radioactive material laboratories each month, ORSS will examine the following records:

a) Wipe test ambient survey, inventory, and waste records.
b) Wipe test and inventory records
c) None
d) Waste and wipe test records
e) Only inventory records

15. Failure to secure radioactive materials from unauthorized removal or access immediately results in placement of the license on probation for at least:

a) 1 month
b) 3 months
c) 6 months
d) 9 months
e) 12 months

16. Lab personnel are conducting two separate experiments using ^{3}H and ^{32}P and generated radioactive waste. Which of the following is true regarding minimization of radioactive waste?

a) Both wastes can be mixed in same disposal container.
b) Each waste has to be disposed in a separate container and brought to ORSS.
c) ^{3}H waste can be thrown in regular trash, and ^{32}P waste must be brought to ORSS.
d) ^{32}P can be thrown in regular trash, and ^{3}H must be brought to ORSS due to the long half-life.

Any Comments / Feedback to improve our services:

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