Please circle the correct answer.

1. Types of particulate radiation include:
   a. Gamma & X-Ray
   b. Gamma & Beta
   c. Alpha & Beta
   d. Beta & X-Ray

2. Types of photon radiation include:
   a. Gamma & X-Ray
   b. Gamma & Beta
   c. Alpha & Beta
   d. Beta & X-Ray

3. An example of a beta emitter that causes both an internal and external hazard is:
   a. H-3
   b. C-14
   c. P-32
   d. S-35

4. Which of the following type of radiation is the most penetrating?
   a. Alpha
   b. Beta
   c. Gamma
   d. Ultra Violet

5. Bremsstrahlung radiation can be avoided by:
   a. Shielding high energy beta radiation with Plexiglas
   b. Shielding high energy beta radiation with lead.
   c. Shielding gamma radiation with lead.
   d. Shielding X-Ray radiation with Plexiglass

6. REM is calculated by multiplying RAD dose (D) times:
   a. Becquerel (B)
   b. Curie (C)
   c. Roentgen (R)
   d. Quality Factor (Q)
7. The quality factor for most beta and gamma emitters is:
   a. 1
   b. 5
   c. 10
   d. 20

8. The estimated dose received while flying from New York to Los Angeles is ______ mREM:
   a. 0.5
   b. 2.0
   c. 4.0
   d. 6.0

9. The average annual dose from background radiation to the general public is ______ mREM.
   a. 50
   b. 180
   c. 620
   d. 390

10. Biological effects occur when exposure to radiation exceeds ______ Rads over a short period of time.
    a. 10
    b. 15
    c. 25
    d. 50

11. The goal of an ALARA program is to reduce exposures to ______ % of the regulatory limits.
    a. 5
    b. 10
    c. 25
    d. 50

12. The three protective measures for reducing exposure are:
    a. Time, Distance and Shielding
    b. Dose, Distance and Shielding
    c. Time, Dose and Shielding
    d. Activity, Dose and Shielding

13. Radiation labeling of waste containers should include:
    a. Isotope, Activity and Dose Rate
    b. Isotope, Activity and Date
    c. Isotope, Weight and Date
    d. Investigator, Isotope, and Date
14. Prior to using a survey meter to check for contamination you should:
   a. Check that batteries are fully charged
   b. Check that the meter has been calibrated within the last year
   c. Check that the meter responds to the presence of radiation
   d. All of the above

15. The best detector choice when working with C-14, S-35, and P-32 is:
   a. Germanium Scintillator
   b. Sodium Iodide Scintillator
   c. Geiger Mueller Detector
   d. Ionization Detector

16. A Sodium Iodide detector would be the best choice when monitoring for:
   a. P-32
   b. H-3
   c. I-125
   d. All of the above

17. The only method to detect tritium is:
   a. With a Geiger Mueller detector
   b. The wipe test method
   c. With a sodium Iodide detector
   d. With a germanium crystal

18. Wipe tests results should be recorded in:
   a. CPM
   b. DPM
   c. RAD
   d. REM

19. If the Counting Efficiency for H-3 is 50% and the result of your wipe test is 100 cpm, what is the activity of the H-3 sample in dpm?
   a. 500 dpm
   b. 200 dpm
   c. 50 dpm
   d. 2 dpm

20. Decayed waste must be held for ________ half-lives before it can be surveyed for disposal.
   a. 2
   b. 5
   c. 10
   d. 20