Radiation Biology, Protection and Applications

(PHYS-450)

Quizzz

Week 12

1. Which of the following fact about radiation/ irradiation is true?

a) All food items consumed by man are radioactive

b) (Alpha) and beta particles and gamma photons are the radiations available for food preservation applications

c) Energy lost per ion pair formed is greater than the ionization energy

d) All of the mentioned

2. Which of the following is correct about alpha particles?

a) High ionization due to relative size and carrying of double positive charge

b) Low penetration power

c) In air, they have a range of few centimeters

d) All of the mentioned

3. Which of the following is correct about beta particles?

a) High specific ionization ability

b) Low penetrating power

c) Higher ionization ability than gamma radiation

d) All of the mentioned

4. In which of the following ways does absorption of gamma radiation take place?

a) Photoelectric effect

b) Compton effect

c) Pair production

d) All of the mentioned

5. Statement 1: _____ radiation is also called cathode radiation.

Statement 2: In _____ radiation, spent fuel elements can be used.

a) Alpha, beta

b) Gamma, alpha

c) Beta, gamma

d) All of the mentioned, all of the mentioned

6. Which of the following reasons is why machine-produced ionizing radiations are preferred over fission products?

a) Fission products require extensive shielding and dose supplied may be so low that prolonged exposure times are required

b) Machine produced radiations are unidirectional and can be turned off

c) Both of the mentioned

d) Neither of the mentioned

7. Statement 1: _____ induce radioactivity in food items.

Statement 2: Variations in dose distributions in many types of containers and with all types of sources range between 100-125%.

a) Protons, False

b) Electrons, False

c) Neutrons, True

d) Any of the mentioned, True

8. Statement 1: It is safe to consume radiation-stabilized food processed with gamma photons of less than 2.3 MeV.

Statement 2: Provisions must be made to limit neutron fluxes in all radiation sources.

a) True, False

b) True, True

c) False, False

d) False, True

9. Statement 1: When matter is traversed by any of the forms of ionizing radiations, _____

Statement 2: Ionization radiations produce _____

a) Energy is absorbed, negligible temperature rise

b) Ion pairs are produced, chemical changes in irradiated materials

c) Both of the mentioned, both of the mentioned

d) Neither of the mentioned, neither of the mentioned

10. Ion pair production by ionizing radiations is more efficient than the thermal process.

a) True

b) False