Biological Effects of Ionizing Radiation:

Key Concepts

Answer Key

Refer to the reading entitled "Biological Effects of Ionizing Radiation" to answer the questions below.

1. The principle factors that determine the biological effect of ionizing radiation are

   (radiation dose, type of radiation, type and volume of biological cells exposed)

2. The possibility of injury from ionizing radiation__*(increases)*___with increasing exposure.

3. Increasing the volume of tissue exposed__*(increases)*___the severity of radiation injury.

4. Alpha particles deposit all their energy in a ____*(short)*____ path.

5. Beta particles deposit their energy over a ___*(longer)*___path.

6. The two main categories of biological effects are ___*(somatic)* __ effects and __*(genetic)*__ effects.

7. Of the two main types of effects in question 6, which applies to the exposed individual and which applies to future generations?

   _*(Somatic)*___ effects apply to the exposed individual.

   _*Genetic)*__effects apply to future generations.

8. Natural background radiation is estimated to account for only _*(1) to (3)*_percent of the spontaneous incidence of cancer.

9. The__*(unborn)*___ and __*(newborn)(very young children)*__are particularly sensitive to radiation exposure.

10. For any radiation exposure greater than zero, there may be at least some __*(risk)*__ .