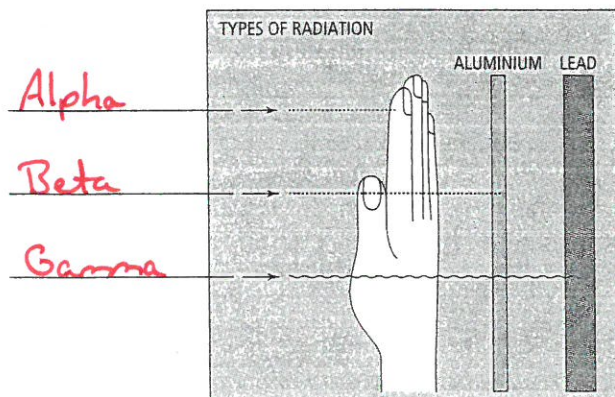


Use with textbook pages 294–297.

Alpha, beta, and gamma radiation

1. Label the following diagram. Identify the penetrating power of the three forms of radioactive decay products: alpha particle, beta particle, and gamma ray.



2. Indicate whether the description is referring to an alpha particle, a beta particle, or a gamma ray. The description can refer to more than one of the forms of radiation.

(a) ${}^0_0\gamma$ G

(b) ${}^0_{-1}\beta$ or ${}^0_{-1}e$ B

(c) $\frac{4}{2}\alpha$ or ${}^4_2\text{He}$ A

(d) has a charge of 0 G

(e) has a charge of 1- B

(f) has a charge of 2+ A

(g) is a helium nucleus A

(h) is a high-speed electron B

(i) is emitted from the nucleus A B G

(j) is emitted only during beta decay B

(k) is emitted only during alpha decay A

(l) can be stopped by aluminium foil A B

(m) is emitted only during gamma decay G

(n) is affected by electric and magnetic fields A B

(o) is not affected by electric and magnetic fields G

(p) is a high energy wave with short wavelengths G

(q) is the highest energy form of electromagnetic radiation G

(r) has low penetrating power (can be stopped by a single piece of paper) A

(s) has the greatest penetrating power (can only be stopped by lead or concrete) G