NAME: .....

RADIOACTIVITY

1. B
2. A
3. A
4. D
5.

(a) 0 **and** - 1 for b;
234 **and** 91 for Pa; 2

(b) An explanation to include:
1. gamma ray a wave;
2. no mass/protons; 2

[4]

6.

(a) gamma; 1

(b) (i) beta; 1

(ii) An explanation to include:

1. alpha would not penetrate/alpha all absorbed/alpha stopped by paper/eq;
2. all gamma would penetrate (too much)/gamma not absorbed;

[Accept alpha not strong enough and gamma is too strong/eq for 1 max] 2

[4]

7.

(a) paper stops *ƒ¿* C1
sheet of paper makes no difference to count rate A1
(b) Aluminium absorbs *ƒ*À allow aluminium stops *ƒ*À C1
Aluminium makes count rate decrease A1
(c) (10mm) lead / Pb stops all *ƒ*À OR only *ƒ*Á gets through (10 mm) lead / Pb B1
still some count rate with lead / Pb B1 [6]