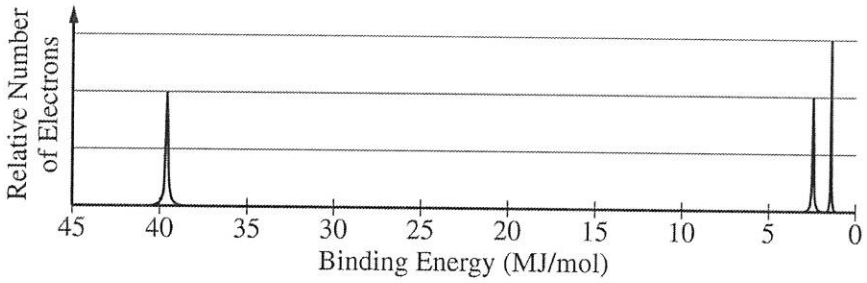

7. The complete photoelectron spectrum of an element is represented above.

   (a) Identify the element.

   A radioactive isotope of the element decays with a half-life of 10. minutes.

   (b) Calculate the value of the rate constant, k, for the radioactive decay. Include units with your answer.

   (c) If 64 atoms of the radioactive isotope are originally present in a sample, what is the expected amount of time that will pass until only one atom of the isotope remains? Show how you arrived at your answer.

STOP

END OF EXAM

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