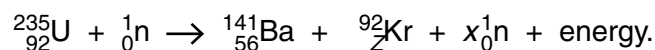


- 7 (a) Uranium (U) has at least fourteen isotopes.  
Explain what is meant by *isotopes*.

For  
Examiner's  
Use

.....  
.....  
..... [2]

- (b) One possible nuclear reaction involving uranium is



- (i) State three quantities that are conserved in a nuclear reaction.

1. ....  
.....  
2. ....  
.....  
3. ....  
..... [3]

- (ii) For this reaction, determine the value of

1.  $Z$ ,

$Z =$  ..... [1]

2.  $x$ .

$x =$  ..... [1]

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