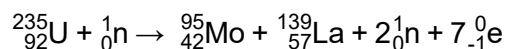


- 8 One possible reaction taking place in the core of a reactor is



	mass
${}_{92}^{235}\text{U}$	235.123 u
${}_{42}^{95}\text{Mo}$	94.945 u
${}_{57}^{139}\text{La}$	138.955 u
proton	1.007 u
neutron	1.009 u

- (a) Explain why large nuclei such as uranium-235 are used in nuclear fission reactor in a power plant.

.....
 [1]

Ignore the mass of electron. Using the data above,

- (b) show that the energy released per fission of uranium is 200 MeV,

[3]

- (c) calculate the energy available from the complete fission of 1.00 g of uranium-235, and

energy = J [2]

- (d) the mass of uranium-235 used by a 500 MW nuclear power station in one hour, assuming 30% efficiency.

mass = g [2]