Marks

- Balance the following nuclear reactions by identifying the missing nuclear particle or nuclide. **3**

$$^{55}_{26}\text{Fe} + {}^{0}_{-1}\text{e} \rightarrow \square$$

$$^{2}_{1}\text{H} + {}^{1}_{1}\text{H} \rightarrow {}^{3}_{2}\text{He} + \square$$

$$^{15}_{7}\text{N} + {}^{1}_{1}\text{p} \rightarrow {}^{15}_{8}\text{O} + \square$$

- Calculate the atomic mass of silicon from the isotope information provided. **2**

Isotope	Mass of isotope (a.m.u.)	Relative abundance
^{28}Si	27.97693	92.21%
^{29}Si	28.97649	4.70%
^{30}Si	29.97376	3.09%

Answer:

- Calculate the molar activity of ^{3}H (in Curie), given its half-life of 12.26 years. **3**

Answer: