

## SECTION B

Answer ALL questions. Write your answers in the spaces provided.

- 11 A muon will decay into a neutrino, an antineutrino and an electron or a positron.  
A positron is the antiparticle of an electron.

(a) State one difference between a positron and an electron.

(1)

(b) Explain whether the following decay would be possible.

You should consider conservation of charge and lepton number.

$$\mu^- \rightarrow e^- + \nu_e + \bar{\nu}_\mu$$

(3)

(Total for Question 11 = 4 marks)

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