16 A recent theory suggests that, during the Big Bang, an 'anti-universe' was created alongside our universe.

This theory suggests that dark matter is a new type of neutrino particle.

(a) Describe what is meant by dark matter.

(2)

(b) The theory suggests that the mass of the new type of neutrino particle is 4.8×10^8 GeV/c^2.

Calculate the mass of this particle in kg.

(3)

Mass of particle = ... kg

(c) The ultimate fate of our universe is uncertain.

Explain how the existence of dark matter contributes to this uncertainty.

(2)

(Total for Question 16 = 7 marks)