

6 The Big Bang theory describes the evolution of the universe.

- (a) Explain how cosmic microwave background radiation (CMBR) supports the Big Bang theory.

(2)

.....

.....

.....

.....

.....

.....

- (b) Hydrogen gas in a laboratory on Earth emits light with a wavelength of 605 nm.

A distant galaxy contains hydrogen which emits light of the same wavelength.

The wavelength of the light from the distant galaxy is measured as 683 nm on Earth.

Calculate the speed of the distant galaxy.

[speed of light =  $3.0 \times 10^8$  m/s]

(4)

speed = ..... m/s

(Total for Question 6 = 6 marks)

