

Question number	Answer	Notes	Marks
8 (a)	Universe began as hot / dense point; Universe has expanded since the Big Bang; Universe has cooled since the Big Bang;	allow idea that Universe started as a single point	3
(b)	any four from: MP1. presence of cosmic microwave background radiation; MP2. CMBR comes from all directions; MP3. CMBR (began as gamma radiation and) wavelength increased (as Universe expanded); MP4. red-shift of galaxies; MP5. further/faster galaxies show a greater red-shift; MP6. red-shift indicates that galaxies are moving away from each other; MP7. relative abundance of helium; MP8. helium formed when Universe was hot enough to fuse protons;	allow CMBR allow CMBR is uniform allow large amount of helium	4

Total for Question 8 = 7 marks