

Question number	Answer	Notes	Marks
4 (a)	A (blue-white);  B is incorrect because orange stars are cooler than blue-white stars C is incorrect because red stars are cooler than blue-white stars D is incorrect because yellow stars are cooler than blue-white stars		1
(b)	any two from: gas collapses / gas particles attract each other;  temperature (of the gas) increases;  fusion starts/eq;	condone 'dust' for 'gas'  allow particles increase in <u>KE</u>	2
(c)	two (small) <b>nuclei</b> ; join together (to produce a large nucleus); releasing energy;	allow gamma radiation	3
(d) (i)	C (mass);  A is incorrect because colour is determined by the surface temperature B is incorrect because distance determines its apparent brightness D is incorrect because temperature determines the spectral class		1
(ii)	any three from: MP1. Rigel will become a red supergiant; MP2. then contracts rapidly; MP3. (explodes as a supernova) leaving a neutron star; MP4. (or) black hole;		3

Total for Question 4 = 10 marks