

Question number	Answer	Notes	Marks
2 (a) (i)	any orbit around Earth; circular orbit centred on Earth;		2
(ii)	any elliptical orbit around Sun;  with focus at Sun;	accept incomplete or full orbit;  accept parabolic/hyperbolic path with Sun at focus for 2 marks	2
(b)	evidence of correct conversion from days to seconds; substitution into given formula; correct evaluation;  Correct answer: 30 km/s e.g. $365 \times 24 \times 60 \times 60 = 31.5 \times 10^6 \text{ s}$ Orbital speed = $(2 \pi r) \div T$ Orbital speed = $(2 \times \pi \times 150\,000\,000) / 31.5 \times 10^6 \text{ s}$ Orbital speed = 29.9 km/s		3
(c)	B - gravitational;  A, C and D cannot be correct as only the gravitational force is responsible for keeping planets in orbit around their star.		1
(d)	starts as nebula/cloud (of gas); reference to main sequence; finishes as white dwarf;  PLUS at least ONE, in the correct place, from protostar/red (super) giant/planetary nebula;  e.g. nebula → protostar → main sequence → red giant → white dwarf and planetary nebula	ignore black dwarf  reject supernova for this mark	4

Total for Question 2 = 12 marks