

Question number	Answer	Notes	Marks
5 (a) (i)	neutron / n;		1
	(ii) correct evaluation; given to 1s.f.;	independent mark	2
	e.g. (number =) 3.3×10^{11} (number =) 3×10^{11}		
(iii)	any three from: MP1. nuclei move (too) slowly at low temperature; MP2. nuclei interact/collide less often at low temperature; MP3. nuclei repel each other; MP4. nuclei cannot get close enough / don't have chance to undergo fusion;	allow RA in terms of high temperature/pressure allow atoms/particles/hydrogen for nuclei allow nuclei not having enough KE allow less chance of collisions	3
(b) (i)	nucleus must be moving;	allow travelling for moving reject if implication that movement is caused by the force	2
	downwards;		
(ii)	increase magnetic field strength / increase speed of nucleus / increase temperature of reactor;	allow use stronger magnets	1

Total for Question 5 = 9 marks