

Question number	Answer	Notes	Marks
11 (a)	any THREE from: MP1 walls further apart; MP2 fewer collisions between particles and walls per second/lower frequency of collisions; MP3 means (average) force on walls lower; MP4 lower force means lower pressure for same wall surface area;	reject unqualified 'fewer collisions' accept idea that force per collision is the same ignore references to particles colliding with each other accept	3
(b)	substitution into given equation " $p_1 \times V_1 = p_2 \times V_2$ "; rearrangement to give p_2 ; evaluation of p_2 ; e.g. $101 \times 110 = p_2 \times 140$ $p_2 = 101 \times 110 / 140$ $p_2 = 79\,000 \text{ (Pa)}$	allow 79357.1... (Pa), 79(.4) kPa , standard form	3
(c)	any THREE from: MP1 pressure outside balloon is lower than inside balloon; MP2 pressure difference causes a force; MP3 force is outwards on balloon; MP4 force causes extension of balloon;	accept 'stretching'	3

Total for Question 11 = 9 marks