Question number	Answer	Notes	Marks
4 (a)	idea that not doing so means impossible to tell what change caused the change in the dependent;	allow idea of a 'fair test' ignore references to accuracy, reliability	1
(b) (i)	straight line; (line) does not go through origin;	condone linear	2
(ii)	given line extrapolated to x-axis; -300 °C;	accept in range –320 to -280 degrees C	2
(iii)	any THREE from: MP1 (increase in temperature) increases speed/KE; MP2 collisions between walls and particles more frequent/eq; MP3 idea collisions between walls and particles are harder; MP4 idea that force (between wall and particle) is increased; MP5 P=F/A so increased force means increased pressure for same area.		3
(c) (i)	conversion of both temperatures to kelvin scale; substitution; rearrangement; evaluation; e.g. 35 °C and 340 °C→ 308 and 613 K 112 (kPa)/308 = P / 613 P = 613 × 112 / 308 P = 220 (kPa)	-1 for POT error accept 222.909… accept 1088 (kPa) for 2 marks (no conversion of temperature)	4
(ii)	number of {particles/moles/mass/molecules} of gas	accept type of gas	1

(Total for Question 4 = 13 marks)