Question Number	Answer			Mark
3 (a)	(Adjust the signal generator to find) trace with the maximum amplitude		(1)	
	Count the number of divisions between two (adjacent) peaks		(1)	
	Multiply by the time per division		(1)	
	Calculate frequency as $1/T$		(1)	**4**
3 (b)(i)	All log V values correct to 2 d.p.	Accept 3 d.p.	(1)	
	All log f values correct to 2 d.p.	Accept 3 d.p.	(1)	
	Axes labelled: y as log(f / Hz) and x as log(V / cm^3)		(1)	
	Correct scales for both axes		(1)	
	Plots accurate to ± 1mm		(1)	
	Best fit line with even spread of plots		(1)	**6**
	Accept equivalent ln-ln graph			
3 (b)(ii)	$\log f = \log k - \frac{1}{2}\log V$		(1)	
	is in the form $y = c + mx$ with a gradient of $-\frac{1}{2}$		(1)	
	Correct calculation of gradient using large triangle shown		(1)	
	Value of gradient in range –0.51 to –0.54 to 2 or 3 s.f., no unit		(1)	
	Valid conclusion including comparison of calculated gradient with the stated expected gradient of $-\frac{1}{2}$		(1)	**5**
	Example of calculation *gradient* = (2.69 – 2.4)/(2.1 – 2.65) = – 0.29/0.55 = –0.53			
	Total for question			**15**