

Ultrasound – Mark scheme

1.	(a)	20000	accept any unambiguous indication	1
	(b)	kilohertz	<i>credit misspellings</i> <i>credit '1000 hertz' or '1000 Hz'</i> <i>accept 1000 oscillations/beats/waves <u>per second</u></i>	1
	(c)	(i)	cleaning (e.g. something delicate such as a watch) or quality control/ flaw detection <i>credit any appropriate extra Specification response e.g. sonar</i>	1
		(ii)	pre-natal (scanning) <i>do not credit just 'scanning'/medical scanning/ scanning a baby</i> <i>credit any appropriate extra Specification response</i> <i>e.g. destruction of (kidney) stones or cleaning teeth</i>	1
	(d)	8 (µs)		1
	(e)	distance (1)	between the <u>boundary</u> and the detector (1) <i>accept 'between the <u>boundary</u> and the source'</i> <i>accept any correct use of speed = distance/time</i>	2
	(f)	examples		2
			publish/tell doctors/the public (1) ... their evidence/results/research/data (1) carry out more research/tests (1) ... to make sure/check reliability (1) <i>allow a wide variety of appropriate responses valid point (1)</i> <i>appropriate example/qualification/expansion/etc. (1)</i> <i>allow just 'stop using them/ultrasonic waves' (1)</i> <i>allow using them (only) for industrial purposes (1)</i>	

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2.	Quality of written communication			1
			correct use of three <u>scientific</u> terms from speed / velocity, reflection, density, time, boundary	
			any three from:	3
			<ul style="list-style-type: none"> • different tissues have different densities • ultrasound travels at different speeds / velocities in different tissues • reflection <i>accept bouncing back</i> • from tissue boundaries • time taken to return 	

[4]