

Question number	Answer	Notes	Marks
2 (a)	10 000; N;	allow 9800, 9810, 10^4 allow "newton(s)" marks are independent	2
(b) (i)	density = mass / volume;	allow abbreviation, e.g. $\rho = m/V$, $d = m/V$ or rearrangements	1
(ii)	substitution OR rearrangement; evaluation; e.g. $2300 = 1000/\text{volume}$ $= 0.43 \text{ (m}^3\text{)}$	award if either seen in working allow 0.4, 0.434, 0.435, 0.4347... condone 0.44	2
(c) (i)	bar chart / bar graph;	condone histogram	1
(ii)	any 1 from: MP1. idea that (density) data is discontinuous; MP2. materials have non-numerical values / are not quantifiable; MP3. material types identified as categories; MP4. idea that a line graph would indicate continuity;	discrete, categoric, non/not continuous	1
(iii)	cork is less dense OR water is denser; cork 25%, $\frac{1}{4}$ as dense OR water four times denser;	accept correct calculation of <u>both</u> densities for 2 marks	2

Total 9 marks

(d)	any 2 from: MP1. speed (of sound) decreases (with temperature); MP2. frequency is constant; MP3. so wavelength decreases (with temperature);	allow 'sound slows down' ignore references to particle speed allow λ is smaller	2
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Total 9 marks