

Question number	Answer	Notes	Marks
3 (a)	B; C;	reject if more than one letter given reject if more than one letter given	2
(b)	substitution; rearrangement; evaluation; e.g. $380\,000 = m \times 10 \times 45$ (m =) $380\,000 / (10 \times 45)$ (m =) 840 (kg)	-1 for POT error allow 844, 844.4...(kg) 862 (kg) if $g=9.8$ 861 (kg) if $g=9.81$	3

Total for question 3 = 5 marks

Question number	Answer	Notes	Marks
4 (a) (i)	0.717; N;	allow 0.7, 0.72, 0.70, 0.703... allow newton(s) condone n marks are independent	2
	(ii) density = mass / volume;	allow symbols, e.g. $\rho = m/V$, $d = m/V$ or rearrangements	1
	(iii) substitution OR rearrangement; evaluation; e.g. $8960 = 0.0717 / V$ OR $V = m / \rho$ ($V =$) $8.00 \times 10^{-6} \text{ (m}^3\text{)}$	-1 for POT error allow 8×10^{-6} , $8.002... \times 10^{-6}$ answer does not need to be in standard form e.g. $0.000008 \text{ (m}^3\text{)}$ gets both marks	2
(b) (i)	bar chart / bar graph;	accept column graph condone histogram	1
	(ii) steel is more dense; OR granite is less dense; steel is (approximately) $3\times$ denser;	allow ratio of densities in range 2.8-3.1 ignore comparison of masses accept correct values of both densities for 2 marks e.g. steel = 7900 kg/m^3 granite = 2700 kg/m^3 tolerance ± 100 on each	2

Total for question 4 = 8 marks