

Question	Answer	Marks	AO Element	Notes	Guidance
1	(weight =) 50 (N) (1) (weight =) mass \times g OR 5×10 (1)	2			
2	75 (kg) (1) $750 \div 10$ (1) $W = mg$ OR (m =) $W \div g$ OR $W \div 10$ in any form (1)	3			
3	620 N	1			
4	(weight =) 8.4 (N) (1) (weight =) mass \times g OR 0.84×10 (1)	2			
5(a)	400 (1) $4000 \div 10$ OR $4000 \div 9.8$ (1) (mass =) weight \div g OR weight $\div 10$ OR weight $\div 9.8$ in any form (1)	3			

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5(b)	500 (1) $1000 \div 2.0$ OR $4000 \div (4 \times 2.0)$ (1) (pressure =) force \div area in any form (1) N/m^2 OR Pa (1)	4			
6	(weight =) mass \times g OR 1.6×10 OR mass = $W \div g$ (1) (weight =) 16 (N) (1)	2		(weight =) 16 (N) gains 2 marks	
7	$400 \text{ (g)} = 0.4 \text{ (kg)}$ (1) $w = m \times g$ in any form (1) 0.4×10 (1) (weight) = 4(.0) (N) (1)	4			
8	78 N (3) OR ALLOW ($m=$) ρV OR $\rho = m / V$ in any form (1) $W = mg$ (1)	3			

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9	any four from: measure volume of water (in a measuring cylinder) (1) add metal to water in the measuring cylinder (1) so that metal is completely submerged (1) measure (new) volume of water in a measuring cylinder (with metal) (1) find the difference between the two volumes (1)	4			
10	density (of water) too small OR manometer would be too high / big owtte	1			
11	7900 OR 7870 (1) 70 ÷ 0.0089 (1) (density =) mass ÷ volume in any form (1)	3			

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12	any three from: measure mass of (empty) measuring cylinder on balance add liquid to measuring cylinder AND read volume measure mass of measuring cylinder AND liquid on balance find difference in the 2 mass readings	3			
13(a)	11 (g / cm ³) (2) OR (density =) $86 \div 8.0$ (1)	2			
13(b)	any value greater than (b)(i) (g / cm ³)	1			
14	(volume =) 48 (cm ³) (2) OR (volume =) $l \times b \times h$ (1)	2			
15	(density =) mass \div volume (1) (density =) $98.4 \div 41.0$ (1) 2.4(0) (g / cm ³) (1)	3		(density =) $98.4 \div 41.0$ gains 2 marks 2.4(0) (g / cm ³) gains 3 marks	

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16	1 (volume of block) increases (1) 2 (mass) remains constant owtte (1) 3 (density) decreases (1)	3			
[Total: 46]					