

Question 1

Question	Answers	Extra Information	Mark
01.1	a reference to decreasing the area of the bottom of the shoe		1
	a reference to increasing the weight of the student		1
01.2	$\frac{490}{0.04}$	A correct answer with no working scores 2 marks.	1
	12 250 (Pa)		1
01.3	0.4×0.5		1
	0.2 (m ²)	A correct answer with no working scores 2 marks.	1
01.4	2750×0.2		1
	550 (N)	Allow error carried forward from 01.3 . A correct answer with no working scores 2 marks.	1
Total			8

Question 2

Question	Answers	Extra Information	Mark
02.1	wood	If more than one box is ticked award 0 marks.	1
02.2	If the density of the object is larger than the density of water, it will sink.	Allow opposite argument for floating.	1
02.3	object 2: $\frac{250}{10}$	Answers must be placed correctly in the table.	1
	25	If both answers are correct with no working, award 4 marks.	1
	object 3: 0.3×30	If one answer is correct with no working, award 2 marks.	1
	9		1
02.4	(object) 3		1
02.5	the mass balance is used to measure the <u>mass</u> of the object	Do not allow weight for mass.	1
	the ruler is used to measure the length of the edges/width, height and depth of the object		1
	volume of the object is calculated by multiplying the length of the edges	Allow volume = width $\times$ height $\times$ depth	1
	density is calculated by dividing the mass of the object by its volume	Allow density = $\frac{\text{mass}}{\text{volume}}$	1
Total			11

Question 3

Question	Answers	Extra Information	Mark
03.1	upthrust weight	If more than two boxes are ticked, subtract one mark for each incorrect box. Do not award less than 0 marks.	1 1
03.2	to float, upthrust must be greater than or equal to weight or to sink, upthrust must be less than weight (since the shape and size of the submarine is constant) the upthrust acting on the submarine is constant filling the (ballast) tanks with water increases the weight of the submarine, making it larger than the upthrust (making it sink) or emptying the (ballast) tanks decreases the weight of the submarine, making it less than the upthrust (making it float)	Do not accept an answer based on density alone.	1 1 1
03.3	3	If more than one box is ticked award 0 marks.	1

Question 3

Question	Answers	Extra Information	Mark
03.4	liquid pressure increases with depth		1
	as you get deeper, the weight of the water above you increases	Allow the opposite description for moving up the bottle.	1
	the water through holes nearer the bottom of the bottle will be squeezed out with a larger pressure/force, making the stream travel further from the bottle/be ejected more horizontally	Allow the opposite argument for water streams from holes nearer the top of the bottle.	1
Total			9