Name of the Student:_____
Max. Marks : 24 Marks **Time : 24 Minutes**

Mark Schemes

Q1.

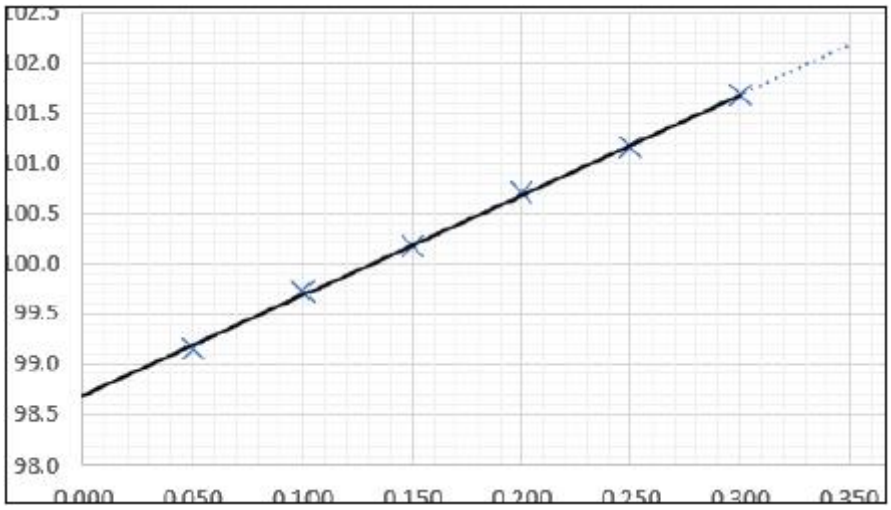
Question number	Answer	Additional guidance	Mark
(i)	An answer that combines the following to provide a logical description of the method • measure unstretched length of spring (1) • measure stretched length of spring (1) • subtract (1)	set unstretched position at 0 read stretched position use a ruler	(3)

Question number	Answer	Additional guidance	Mark
(ii)	substitution (1) $\frac{1.5}{30}$ evaluation (1) 0.05 (N/mm)	award full marks for correct answer without working 50 N/m allow power of 10 (POT) error for 1 mark	(2)

Q2.

Question number	Answer	Additional guidance	Mark
(i)	Points plotted to within ± 1 small square (0.100, 99.7) (1) (0.250, 101.2) (1)		(2) AO2

Question number	Answer	Additional guidance	Mark
(ii)	best fit straight line passing through at least four of the points (1)	do not accept tramlining (multiple lines / curves) ignore slight shakiness in drawing	(1) AO2



Question number	Answer	Mark
(iii)	**D** $y = mx + c$ A is incorrect because the graph is a straight line and this equation describes a parabola. B is incorrect because the line intercepts the Y axis at a positive value and this equation describes a line passing through the origin. C is incorrect because this equation describes a line which intercepts the Y axis at a negative value.	**(1)** **AO2**

Question number	Answer	Additional guidance	Mark
(iv)	answer between 98.6 and 98.8 (kPa)	allow ecf from their line of best fit in b(ii)	**(1)** **AO3**

Q3.

Question number	Answer	Additional guidance	Mark
	An answer that contains the following points of understanding: • increase in depth (1) • increase in density (1)	sea water contains salt	**(2)**

Q4.

Question Number:	Answer	Mark
	Answers will be credited according to candidate's deployment of knowledge and understanding of the material in relation to the qualities and skills outlined in the generic mark scheme. The indicative (example) content below is not prescriptive and candidates are not required to include all the material which is indicated as relevant. Additional content included in the response must be scientific and relevant. • same force at tip and head of the thumb tack • flat end has a large surface area • pointed end has a very small surface area • using pressure =force /area • at pointed end the pressure is large • large pressure , tip goes into wood • at flat end the pressure is much less • the flat end does not damage the thumb	**(1)** AO 1 2

Level	Mark	Descriptor
	0	• No rewardable material.
Level 1	1-2	• Demonstrates elements of physics understanding, some of which is inaccurate. Understanding of scientific ideas lacks detail. (AO1) • Presents an explanation with some structure and coherence. (AO1)
Level 2	3-4	• Demonstrates physics understanding, which is mostly relevant but may include some inaccuracies. Understanding of scientific ideas is not fully detailed and/or developed. (AO1) • Presents an explanation that has a structure which is mostly clear, coherent and logical. (AO1)
Level 3	5-6	• Demonstrates accurate and relevant physics understanding throughout. Understanding of the scientific ideas is detailed and fully developed. (AO1) • Presents an explanation that has a well-developed structure which is clear, coherent and logical. (AO1)

Q5.

Question Number:	Answer	Additional guidance	Mark
	use of 50/10 (1) 6 (times)(1)	5 seen in answer line addition of 1 atmosphere award full marks for the correct answer without working	**(2)** AO 2 2

Q6.

Question number	Answer	Additional guidance	Mark
	Any two from: height of atmosphere (above aeroplane) (1) density of atmosphere (1) the temperature (of the atmosphere) (1)	 less air above the aeroplane accept oxygen for air in this context the air gets thinner the air gets colder	**(2)**

Q7.

Question Number:	Answer	Additional guidance	Mark
	an explanation linking 2 from: pressure in a liquid increases with depth (1) the greater the height of water (in the container)(1) the more force (pushing water out) (1)	 allow greater {weight of / volume of/amount of /more} water greater force/pressure/push (on water)	**(2)** AO 2 1