Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic :15_Forces and their matter

Name of the Student:_____
Max. Marks : 18 Marks **Time : 18 Minutes**

Mark Schemes

Q1.

Question number	Answer	Additional guidance	Mark
(i)	substitution (1) (pressure =) $\frac{2500}{4 \times 0.022}$ evaluation (1) 28 000 (Pa)	 any number rounding to 28 000 e.g. 28 400, 28 410, 28 409 award full marks for the correct answer without working award **one** mark for numbers that round to 110 000 (Pa) (missing 4 in denominator) award 1 mark for 454 545 (times by 4)	**(2)** **AO2.1**

Question number	Answer	Additional guidance	Mark
(ii)	An explanation linking any **two** from camel is less likely to sink into the soft ground (1) (same) force / weight is distributed / spread out (1) camel's hoof has greater (surface) area (than donkey) (1) camel's hoof exerts less pressure (than it would if hoof were smaller) (1)	ORA for donkey ignore pressure is spread out wider if no other marks scored then allow 1 mark for split in camel hoof enables better grip (as it walks)	**(2)** **AO3.1**

Q2.

Question number	Answer	Additional guidance	Mark
	substitution (1) $0.14 = ½ \times 175 \times x^2$ rearrangement for x^2 (1) $(x^2=)\ \frac{0.14 \times 2}{175}$ or $\frac{0.14}{0.5 \times 175}$ evaluation (1) 0.04 (m)	substitution and rearrangement in either order $x^2 = \frac{E}{\frac{1}{2} \times k}$ 1.6×10^{-3} seen gains 2 marks 0.02(m) gains 2 marks 0.028 gains 1 mark award full marks for the correct answer without working	**(3)**

Q3.

Question number	Answer	Additional guidance	Mark
(i)	selection and substitution (1) (F=) 260 x 6.2 (x 10^{-3}) evaluation (1) (F=) 1.612 (N) or 1.61 (N) answer to 2 s.f. (1) 1.6 (N)	 award 1 mark only for answer of 1.61(2) to any other power of ten, e.g. 1612 (N) independent mark for any answer given to 2 significant figures allow 2 marks for answer of 1600 (N) with or without working 1.60 scores 2 marks award full marks for correct answer without working.	**(3)** **AO2**

Question number	Answer	Additional guidance	Mark
(ii)	a description including read position of top of spring against the ruler (1) read position of top of spring when pressed down (1) subtract the two readings (1)	May be seen drawn in figure 17 measure **length** at the start allow value from ruler e.g. 2.9 (cm) measure the **length** when pressed down allow value from ruler e.g. 2.0 (cm) subtract the two measurements allow find the difference for subtract allow calculated value from diagram e.g. 0.9 (cm) ignore repeat	**(3)** **AO1**
	OR substitution (1) 0.39 = 260 x change in length rearrangement (1) (change in length =) $\frac{0.39}{260}$ evaluation (1) 1.5 mm unit must be shown	 (0).0015m unit must be shown	

Question number	Answer	Additional guidance	Mark
(iii)	description to include change to enable accurate location of top of spring (1) for example: pointer, set square, thin sheet / another ruler (under finger) description of how the change is used (1)	may be seen drawn in Figure 17 move ruler closer to spring compress spring with weight rather than finger ignore photographs make measurements from where pointer / set square / thin sheet / other ruler touches the ruler reduce parallax error prevents fluctuations while measuring ignore repeats ignore unqualified references to accuracy or precision	**(2)** **AO3**

Q4.

Question number	Answer	Additional guidance	Mark
	substitution (1) (force =) 4.8 (x 10^{7}) x 1.2 (x 10^{-5}) evaluation (1) 576 (N) their evaluation rounded to 2sf (1) 580 (N)	award full marks for the correct answer (580) without working award 1 mark for 5.76 to any other power of ten award 2 marks for 5.8 to any other power of ten	**(3)** **AO2.1**