

MARK SCHEME for the May/June 2006 question paper

5054 PHYSICS

5054/04

Paper 4

maximum raw mark 30

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All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

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	GCE O Level – May/June 2006	5054	04

- 1 (a) (i) length clearly marked, from top or bottom of rings
(ii) vertical ruler drawn within $\frac{1}{2}$ cm of load
(iii) eye/observer positioned to avoid parallax [3]
- (b) values in table in ascending/descending order [1]
- (c) axes: – correct way round, labelled quantity and unit
scales: – more than $\frac{1}{2}$ grid, sensible
points: plotted accurately (within $\frac{1}{2}$ square) and neat
line: straight line best fit drawn with ruler, neat [4]
- (d) (i) spring has length with no load
(ii) no line does not go through origin [2]
- (e) (i) increase in length
(ii) 20.5 ± 0.5 cm
(iii) straight line through origin [4]
- [Total: 14]**
- 2 (a) iron/soft iron/mumetal [1]
- (b) any suitable method which will give a comparison
e.g. how many/mass paper clips/pins/nails/tacks holds,
distance from paper clip to make paper clip move/jump
distance from compass to make it move [1]
- (c) A: does not change circuit/current/resistance [1]
- [Total: 3]**
- 3 (a) connects battery, bulb, component in series [1]
- (b) reverses connections in box/battery
checks brightness [2]
- (c) no light
bright both ways
bright one way, off when connections reversed
dim both ways [4]
- [Total: 7]**
- 4 (a) 0.8 ± 0.1 cm 5.0 ± 0.1 cm [1]
draw parallel tangents/measure more than one in different places [1]
- (b) 7.85 cm^3 ecf (one, two or 3sf) [1]
- (c) thickest part in the centre/at distance from ruler/
parallax error explained [1]
- (d) (i) displacement of water described,
volume displaced equals volume of lens
(ii) volume of water displaced small, needs large displacement can/
measuring cylinder/large scale on measuring cylinder [2]
- [Total: 6]**
- [Paper Total: 30]**