



Rewarding Learning

General Certificate of Secondary Education
2012

Science: Single Award (Modular)

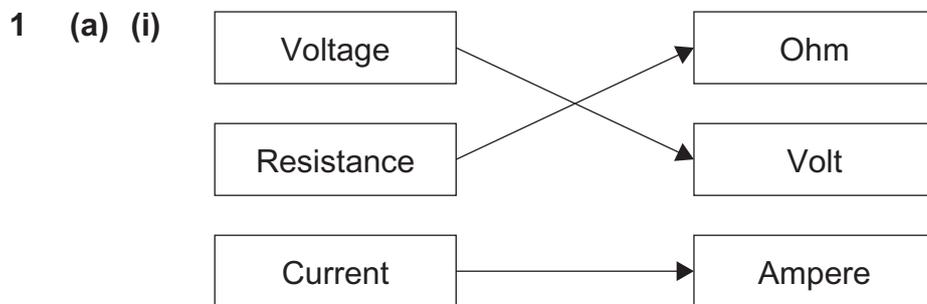
Electricity, Waves and Communication
Module 5

Foundation Tier

[GSC51]

WEDNESDAY 14 NOVEMBER 2012
1.30 pm–2.15 pm

**MARK
SCHEME**



All 3 correct = 2 marks 1/2 correct = 1 mark

- | | | AVAILABLE MARKS |
|-----------|--|-----------------|
| | | [2] |
| (ii) | resistance | [1] |
| (iii) | toaster [1] kettle [1] | [2] |
| (b) (i) | A = fuse | [1] |
| (ii) | B = neutral (wire) | [1] |
| (iii) | green + yellow | [1] |
| | | 8 |
| 2 (a) | A = cornea [1] B = retina [1] | [2] |
| (b) (i) | convex | [1] |
| (ii) | bends/refracts light rays [1] together/inwards [1] converges light rays/focuses light rays on retina (any 2) | [2] |
| (c) (i) | lens too strong [1] light rays meet/focused before retina [1] | [2] |
| (ii) | close objects clear/far objects blurry | [1] |
| | | 8 |
| 3 (a) (i) | gas/wind/hydroelectric | [1] |
| (ii) | coal/oil/nuclear | [1] |
| (b) (i) | will not run out | [1] |
| (ii) | wind/hydroelectric/tidal | [1] |
| (c) | too expensive/stops use by boats or fish/not much electricity produced/still experimental | [1] |
| (d) | coast [1] transport [1] | [2] |
| | | 7 |

| | | AVAILABLE MARKS | |
|--------------|--|-----------------|-----------|
| 4 | (a) (i) transverse | [1] | |
| | (ii) 0.3 | [1] | |
| | (iii) 0.4 | [1] | |
| | (b) (i) all carry energy/travel at same speed/ travel at speed of light/all transverse | [1] | |
| | (ii) frequency/wavelength | [1] | |
| | (iii) radio waves = tv + radio signals microwave = mobile phones/satellites visible light/infrared = optic fibres (1 for named type + 1 for correct use) | [2] | |
| 5 | (a) (i) circuit 1 voltmeter replaced with ammeter | [1] | |
| | circuit 2 1 cell/or battery is the wrong way round | [1] | |
| | (ii) series | [1] | |
| | (b) A3 = 0.2A | [1] | |
| | A4 = 0.4A | [1] | |
| | (c) parallel/circuit 3 = always got light/other cars can see you one goes out, other still lit [1] series/circuits 1+2 = if one goes out, both go out [1] | [2] | |
| 6 | (a) 5 points correct = 2 marks 4/3 points correct = 1 mark correct line = 1 mark | [3] | |
| | (b) bigger diameter = more power/more electricity | [1] | |
| | (c) wind speed/strength/blade shape | [1] | |
| | (d) less carbon dioxide/greenhouse gases/air pollution [1] less global warming/less greenhouse effect [1] saves fossil fuels [1] | [3] | |
| Total | | | 45 |