



General Certificate of Secondary Education

Science Double Award Modular 3468

Physics A 3453

Module 09: Energy

Module Test Answer Keys

March 2007 examination series

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for the standardisation meeting each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting they are required to refer these to the Principal Examiner.

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Energy : Foundation Tier

Question No.	KEY
One	1 – Toaster 2 – Torch 3 – Food mixer 4 – Radio
Two	1 – radiation 2 – conduction 3 – convection 4 – evaporation
Three	1 – wind farm 2 – tidal barrage 3 – hydroelectric scheme 4 – nuclear power station
Four	1 – geothermal 2 – heat 3 – kinetic 4 – electrical
Five	1 – radiation is reflected onto the pipe 2 – water in the pipe absorbs energy 3 – steam drives a turbine 4 – a turbine turns a generator
Six	it is not practical to replace batteries on a satellite there is an almost continuous supply of solar energy in space
Seven	hydroelectric tidal barrage
Eight	8.1 – B, 8.2 – D, 8.3 – D, 8.4 – D
Nine	9.1 – A, 9.2 – A, 9.3 – A, 9.4 – C
Ten	10.1 – C, 10.2 – A, 10.3 – B, 10.4 – D

Energy : Higher Tier

Question No.	KEY
One	1 – radiation is reflected onto the pipe 2 – water in the pipe absorbs energy 3 – steam drives a turbine 4 – a turbine turns a generator
Two	1 – nuclear fuel 2 – water behind a dam (hydroelectricity) 3 – coal 4 – wind
Three	hydroelectric tidal barrage
Four	energy is transferred by free electrons the hotter the metal, the more kinetic energy the vibrating ions will have
Five	5.1 – B, 5.2 – D, 5.3 – D, 5.4 – D
Six	6.1 – A, 6.2 – A, 6.3 – A, 6.4 – C
Seven	7.1 – C, 7.2 – A, 7.3 – B, 7.4 – D
Eight	8.1 – C, 8.2 – C, 8.3 – C, 8.4 – B
Nine	9.1 – A, 9.2 – C, 9.3 – A, 9.4 – A
Ten	10.1 – C, 10.2 – D, 10.3 – C, 10.4 – A