



GCSE BITESIZE Examinations

General Certificate of Secondary Education

AQA SCIENCE A PHY1A

Unit Physics P1a (Energy and Electricity)

AQA PHYSICS

Unit Physics P1a (Energy and Electricity)

HIGHER TIER

Marking scheme

Time allowed: 30 minutes

Maximum marks: 36

Instructions

- Award **one** mark for each correct answer.

HIGHER TIER**ANSWERS**Questions **ONE** to **NINE**

QUESTION ONE

- 1 **A** - Transformer
- 2 **D** - Boiler
- 3 **B** - Turbine
- 4 **C** - Generator

QUESTION TWO

- 1 **C** - Controlled
- 2 **D** - Reliable
- 3 **A** - Precise
- 4 **B** - Valid

QUESTION THREE

- 3A **1** - Same Different
- 3B **4** - Seven and eight minutes for the dull black can
- 3C **2** - Dull black surfaces are best at emitting thermal radiation.
- 3D **3** - The temperature difference between the can and the surroundings became less.

QUESTION FOUR

- 4A **3** – Hot water tank insulation
- 4B **1** - Three times more
- 4C **3** - The energy-saving bulbs were wasting less heat.
- 4D **2** - They have fewer external walls through which to lose heat.

QUESTION FIVE

- 5A **2** gravitational potential → kinetic → electrical
- 5B **1** - Tidal
- 5C **1** - It causes the large-scale loss of animal and plant habitats.
- 5D **3** - To store the water for use again during periods of high demand

QUESTION SIX

- 6A** 1 - 6 kJ
6B 4 - more than 3.5 kJ
6C 3 - It will be transferred to the surroundings as heat.
6D 2 - £4.90

QUESTION SEVEN

- 7A** 4 - Gas, coal, nuclear, hydroelectric
7B 4 - 55 gigawatts
7C 3 - 47 gigawatts
7D 2 - They generate less atmospheric pollution.

QUESTION EIGHT

- 8A** 2 - Statements i) and ii)
8B 2 - The water molecules gain kinetic energy and move apart, causing the region of water above the flame to expand and rise, carrying with it the heat.
8C 3 - Free electrons gain kinetic energy, enabling them to move faster and collide with other free electrons, transferring the energy through the metal.
8D 3 - 5.94 kWh

QUESTION NINE

- 9A** 4 - wind
9B 1 - £ 4
9C 4 - The total cost of generating electricity from biomass is twice as much as from gas.
9D 2 - The energy in wind is spread out, so there is a greater cost associated with buying more land and building hundreds of windmills to harness enough of it.