

Energy Stores + Systems

Mark Scheme

Level	GCSE (9-1)
Subject	Combined Science: Trilogy - Physics
Exam Board	AQA
Topic	6.1 Energy
Sub-Topic	Energy Stores + Systems
Difficulty Level	Gold Level
Booklet	Mark Scheme

Time Allowed: 12 minutes

Score: /11

Percentage: /100

Grade Boundaries:

M1.(a) $600 \text{ kg} = 5880 \text{ N}$

1

$$\text{power} = \frac{5880 \times 35}{45}$$

1

$$= 4573.3 \text{ (W)}$$

this step without the previous steps stated gains 3 marks

1

$$\% \text{ Eff.} = \frac{4573.3 \times 100}{8000}$$

1

$$= 57.17 \text{ (\%)}$$

allow 57.17 with no working shown for 5 marks

1

(b) $\text{gpe} = 600 \times 9.8 \times 35$

1

$$= 205\,800$$

1

$$\text{gpe} = \text{KE} = \frac{1}{2} m v^2$$

1

$$v = \sqrt{\frac{2 \times \text{KE}}{m}}$$

1

$$= \sqrt{\frac{411\,600}{600}}$$

1

$$= 26.2 \text{ (m / s)}$$

allow 26.2 with no working shown for 6 marks

1

[11]