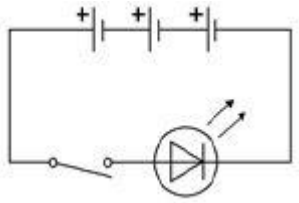
Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic: GCSE Triple Science_Electricity (Standard Demand Questions)

Name of the Student:_____
Max. Marks : 22 Marks **Time : 22 Minutes**

Mark Schemes

Q1.

(a)



1

(b) charge flow = current × time
or

Q = *It*

1

(c) I = 0.050 (A)

1

Q = 0.050 × 14 400

allow a correct substitution using an incorrectly/not converted value of I

1

Q = 720 (C)

allow a correct calculation using an incorrectly/not converted value of I

1

(d) there is no current in a diode (in the reverse direction)
or
charge will not flow through a diode (in the reverse direction)

allow diode will not conduct (electric charge)
do not accept the circuit is not complete

1

(because) a diode has a (very) high resistance (in the reverse direction)

1

(e) Efficiency = $\frac{\text{Useful power output}}{\text{Total power input}}$

1

(f) 0.75 = $\frac{\text{Useful power output}}{0.24}$

1

Useful power output = 0.75 × 0.24

1

Useful power output = 0.18 (W)

1

[11]

Q2.

(a) density = $\frac{\text{mass}}{\text{volume}}$

or

$\rho = \frac{m}{V}$

1

(b) $998 = \frac{m}{6\,500\,000}$

1

$m = 998 \times 6\,500\,000$

1

$m = 6\,487\,000\,000$

1

$m = 6.487 \times 10^9$ (kg)

allow a correct conversion of their calculated value of mass into standard form

1

(c) energy transferred = power × time

or

$E = Pt$

1

(d) $t = 18\,000$ (s)

or

$t = 5 \times 60 \times 60$

1

$E = 1.5 \times 10^9 \times 18\,000$

allow a correct substitution using an incorrectly/not converted value of t

1

$E = 2.7 \times 10^{13}$ (J)

allow a correct calculation using an incorrectly/not converted value of t

1

(e) the variation in demand is (much) greater than 1.5×10^9 W

allow the increase in demand is greater than the (power) output of the (hydroelectric) power station

1

demand remains high for longer than 5 hours

allow 04:00 to 16:00 is 12 hours

allow 04:00 to 16:00 is greater than 5 hours

1

[11]