Name of the Student:_____
Max. Marks : 18 Marks **Time : 18 Minutes**

Mark Schemes

Q1.

(a) increased

1

decreased

1

stayed the same

1

(b) random error

1

(c) $A_2 = 0.12$ (A)

1

$A_5 = 0.36$ (A)

1

(d) $P = 0.12^2 \times 15$

1

P = 0.216 (W)

1

[8]

Q2.

(a) (fixed) solar cells aren't always pointed (directly) at the Sun

or

(fixed) solar cells don't track the Sun (through the sky)

1

(fixed) solar cells don't (always) receive maximum intensity of solar radiation

allow solar cells won't receive as much (solar) energy

allow solar cells won't generate as much electricity

1

(b) $Q = 3.5 \times 3600$

1

Q = 12 600 (C)

1

(c)

$$\text{efficiency} = \frac{\text{useful power output}}{\text{total power input}}$$

1

(d)

$$0.16 = \frac{\text{useful power output}}{7500}$$

1

useful power output =
0.16 × 7500

1

useful power output = 1200 (W)

1

(e) the energy becomes less useful

1

(f) a very large area would need to be covered with solar cells

1

[10]