

Name of the Student: _____

Max. Marks : 21 Marks

Time : 21 Minutes

Mark Schemes

Q1.

- (a) (i) connect the earth wire (to pin)
answers must be in terms of correcting the faults
1
- screw cable grip (across cable)
accept tighten the cable grip
1
- (ii) any **two** from:
- fuse gets (very) hot
 - fuse melts
accept blows for melts
*do **not** accept break / snap fuse / blow up*
 - circuit breaks / switches off
accept stops current flowing
2
- (b) any **two** from:
- hairdryer is plugged into mains (electricity socket)
it refers to hairdryer
hairdryer works from the mains
 - or**
hairdryer is using 230 V
accept 240 for 230
 - water conducts electricity
*do **not** accept water and electricity don't mix*
 - radio is low power / current / pd / voltage
accept radio not connected to the mains
*do **not** accept radio is waterproof*
 - (the current in / pd across) hairdryer more likely to give a (fatal) electric shock
accept the idea of electrocution if hairdryer is wet
accept the idea of radio not causing electrocution if wet
2

[6]

Q2.

- (a) (i) TV 1
- (ii) hairdryer and sandwich toaster
both required either order but no others 1
- (b) (i) 1.2
allow 1 mark for correct substitution
ie 0.4×3 provided that no subsequent step is shown 2
- (ii) 18
accept £0.18 for both marks
or
 their (b)(i) $\times 15$ correctly calculated
an answer 0.18 scores 1 mark
allow 1 mark for correct substitution
ie 1.2 or their (b)(i) $\times 15$ provided that no subsequent step is shown 2
- [6]**

Q3.

- (a) **A**
only scores if A chosen 1
- it is alternating / a.c.
accept because B and C are d.c.
or
 it changes direction/p.d.
accept voltage for p.d.
it goes up and down is insufficient
it is constantly changing is insufficient
an answer B and/or C with the reason because it is direct current/d.c
scores 1 mark 1
- (b) too much current (through socket)
accept electricity for current
accept too much power
accept socket/circuit overloaded
do not accept voltage/p.d for current 1
- wiring / socket gets hot
accept melts for gets hot
accept risk of fire
risk of fire in appliances is insufficient
ignore reference to sparking
overloaded plugs and plugs getting hot or fuses melting is insufficient 1

[4]

Q4.

(a) fan

1

drill

1

washing machine

four circled including correct three scores 1 mark

five circled scores zero

1

(b) Appliances only transfer part of the energy usefully

1

The energy transferred by appliances makes the surroundings warmer

1

[5]