Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic: GCSE Triple Science_Particle Model Of Matter (Standard Demand Questions)

Name of the Student:_____
Max. Marks : 17 Marks **Time : 17 Minutes**

Mark Schemes

Q1.

accept atoms / particles for ions throughout

(a metal has) free <u>electrons</u>
accept mobile for free
1

(kinetic) energy of (free) electrons increases
accept energy of ions increases
accept ions vibrate with a bigger amplitude
accept ions vibrate more
*do **not** accept electrons vibrate more*
1

(free) <u>electrons</u> move faster
1

or

electrons move through metal
accept electrons collide with other electrons / ions

(so) electrons transfer energy to other electrons / ions
accept ions transfer energy to neighbouring ions
1

[4]

Q2.

(a) (i) radiation
1

(ii) traps (small pockets of) air
*do **not** accept it's an insulator*
*do **not** accept reduces conduction and / or convection*
*do **not** allow it doesn't allow heat to escape*
1

(b) (i) bigger temperature difference (between the water and surroundings) at the start (than at the end)
*do **not** accept water is hotter*
1

(ii) starting temperature (of the water)

accept thickness of fleece
*do **not** accept same amount of fleece*
*do **not** accept thermometer / can*
*do **not** accept time is the same*

1

(iii) 18 (°C)
correct answer only

1

(iv) **M**

1

smallest temperature drop (after 20 mins)
*cannot score if **M** is not chosen*
accept it's the best insulator
accept smallest loss in heat
accept keeps heat / warmth in for longer

1

[7]

Q3.

(a) conduction

1

(b) (i) any **one** from:

- starting temperature (of cold water)
  temperature is insufficient
- pipe length
  accept size of pipe
- pipe diameter
- pipe (wall) thickness
- volume of cold water
  accept amount for volume
- temperature of hot water (in)
- time

1

(ii) (type of) material is categoric
accept one variable is categoric
accept variable(s) are categoric
accept it is categoric
accept variable(s) are not continuous
descriptions of variables ie names and numbers is insufficient

1

(iii) copper

1

greatest temperature change

only scores if copper chosen

accept heat for temperature

accept heated water the fastest

accept it was hottest (after 10 minutes)

accept it is the best / a good conductor

1

(c) larger (surface) area

accept the pipe is longer

accept hot (dirty) water (inside pipe) is in contact with the cold water (outside pipe) for a longer time

he pipe is a spiral is insufficient

1

[6]