Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic: Waves (High Demand Questions)

Name of the Student:_____
Max. Marks : 19 Marks **Time : 19 Minutes**

Mark Schemes

Q1.

(a) distance across all 8 wavelengths = 113 (mm)
allow a range from 108 (mm) to 118 (mm)
1

their distance × 5.0
1

wavelength = 70 (mm)
allow a range from 68 mm to 72 mm
1

(b) 97 × 5 = (96 + 99 + 97 + **X** + 97)
*allow **X** = (97 × 5) - (96 + 99 + 97 + 97)*
1

X = 96
1

(c) the spread of values about the mean is very small
1

(d) the oscillations / vibrations in longitudinal waves are parallel to the direction of energy transfer
allow direction of wave travel for direction of energy transfer
1

(whereas) the oscillations / vibrations in transverse waves are perpendicular to the direction of energy transfer
1

*if no other mark awarded allow 1 mark for oscillations / vibrations in longitudinal waves are parallel **and** oscillations / vibrations in transverse waves are perpendicular*

[8]

Q2.

(a) **any two pairs from**

- place each flask the same distance from the infrared lamp
allow use two lamps at an equal distance from each flask

- so the intensity of infrared radiation incident on each flask is the same

- use flasks of the same shape and size
- so the surface area is the same

- use equal volumes of water

  allow use equal masses of water

- because volume of water affects the rate at which the water temperature increases

4

(b) 7.5

allow 8

1

240

1

(c) (black flask line has) a greater gradient
or
temperature (of the black flask) increased more (during the same time)

1

(d) the flasks absorb infrared radiation **and** transfer energy to surroundings (by heating and emission of infrared)

1

initially the rate of absorption of infrared is greater than the rate of energy transfer to the surroundings (causing the temperature to increase)

1

(rate of) energy transfer to surroundings increases as the temperature of the flasks increase

1

eventually the rate of energy transfer to surroundings = rate of energy transfer to flasks (causing the temperature to become constant)

1

allow water for flasks throughout

[11]