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

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

Mark Schemes

Q1.

(a) (i) C

1

(ii) The speed of star **B** is less than the speed of star **D**.

1

(b) 300 000 000

*allow **1** mark for correct substitution ie 200 000 × 1500 provided no subsequent step shown*

2

m / s

allow unit correctly indicated in list if not written in answer space

1

[5]

Q2.

(a) 1.25

*accept 1.3 for **2** marks*
*allow **1** mark for correct substitution*
ie $\frac{1}{0.8}$
provided no subsequent step shown

2

(b) (i) increasing the length (of the pendulum) decreases the number of oscillations / swings made (in 20 seconds)

accept increasing the length (of the pendulum) increases the time (of 1 oscillation / swing)
accept increasing the length (of the pendulum) decreases the speed / frequency (of 1 oscillation / swing)
answers must refer to the effect of increasing / decreasing length
ignore references to time being proportional to length

1

changing the mass (of the pendulum bob) does not change the number of oscillations / swings made (in 20 seconds)

accept changing the mass does not change the time / speed / frequency / results
accept weight for mass

1

(ii) any **two** suitable improvements:

- measure (the number of swings) over a wider range of (pendulum) lengths
- measure (the number of swings) over a wider range of (bob) masses
- measure the number of swings made over a greater period of time
- repeat each measurement & calculate mean / average (number of oscillations in 20 seconds)
  accept repeat measurements & discard anomalous measurements
  repeat measurements is insufficient
- measure (the total number of swings &) the fraction of swings made
- start the swings at the same height.
  use a computer / datalogger to make measurement (of number of oscillations) is insufficient
  measuring time period is insufficient
  using a stop clock with greater resolution is insufficient

2

[6]

Q3.

(a) (i) 440 (sound) waves produced in one second
accept vibrations / oscillations for waves

1

(ii) 0.773 (metres)
*allow **2** marks for an answer that rounds to 0.773*
*allow **2** marks for an answer of* $0.7\dot{7}\dot{2}$
*allow **2** marks for an answer of 0.772*
*allow **1** mark for correct substitution ie 340 = 440 × λ*

3

(b) (sound is) louder
*do **not** accept the converse*

1

as amplitude is larger
waves are taller is insufficient

1

higher pitch / frequency

1

as more waves are seen
reference to wavelengths alone is insufficient
waves are closer together is insufficient

1

[8]