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

Name of the Student:_____
Max. Marks : 12 Marks **Time : 12 Minutes**

Mark Schemes

Q1.

(a) any **two** similarities and any **two** differences

read whole answer to ensure that there are no contradictory statements which negates that mark

ignore reference to senses in similarities and differences

similarities

- (both can be) reflected
- (both can be) refracted
  allow both travel through any correctly named solid / gas / liquid
- (both can be) diffracted
- (both) interfere
- (both) transfer energy
  ignore both are types of energy / waves / oscillations
- (both exhibit) Doppler effect
  *do **not** accept statements like both are transverse as a similarity*

differences

- light can travel through a vacuum
  or
  sound cannot travel through a vacuum
  allow sound requires a medium / particles to travel through
- (different) speed / velocity
- one is longitudinal and one is transverse
  accept light is faster than sound
  *do **not** accept sound is transverse and light is longitudinal*
  allow correct description:
  (longitudinal) the oscillations / vibrations are parallel to / same direction as (the direction of energy transfer)
  and
  (transverse) the oscillations / vibrations are 90° to / perpendicular to (the direction of energy transfer)
- sound is a mechanical wave / caused by vibrations and light is an

electromagnetic wave

accept sound waves have a longer wavelength / lower frequency

*if no other marks gained allow **1** mark for any correct difference(s) where the waves are not specified*

eg one is transverse

eg have different wavelengths / frequencies

4

(b) (i) *working must be shown for **3** marks*

4800 x 0.25

1

1200(m/s)

1

(liquid) C

ignore water / named liquid

1

(ii) (yes / no)

ignore yes / no, marks are for the explanation

speed increases as density increases

allow positive correlation

allow the more dense the liquid the less time (for sound to travel through)

ignore they both increase

ignore there was no pattern

1

but, mercury should have a (much) greater speed given the higher density

allow mercury does not fit the pattern / is an anomaly

1

[9]

Q2.

(a) *accept 'they' as referring to microwaves*

microwaves can travel through the atmosphere / ionosphere

accept not reflected by ionosphere

or

radio waves cannot (escape from the atmosphere)

allow cannot penetrate / travel through

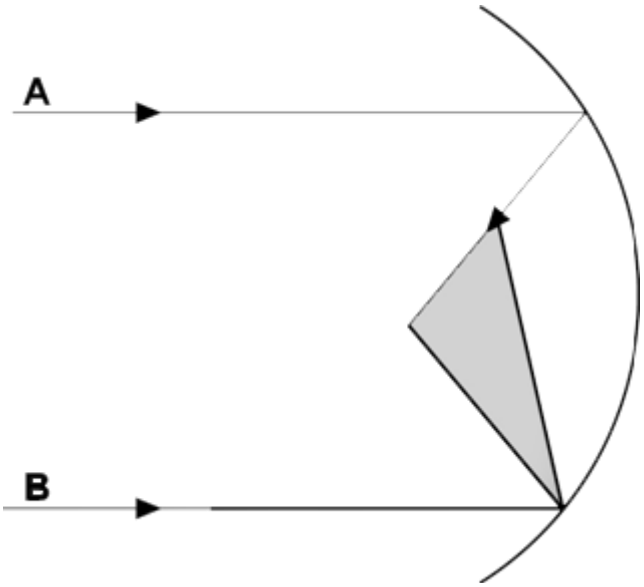
ignore frequency / wavelength

ignore reference to speed of waves

1

(b) (i) straight continuous lines drawn to show microwave B reflected by satellite dish

reflected ray should be within limits of grey area



1

(ii) receiver drawn using rectangle symbol where microwaves A and B meet / cross over

allow ecf from (b)(i)

if (b)(i) not attempted no marks can be awarded for (b)(ii)

if lines do not meet / cross over allow receiver where extended lines would meet

allow any clear indication where receiver should be

1

[3]