

Name of the Student: _____

Max. Marks : 20 Marks

Time : 20 Minutes

Mark Schemes

Q1.

(a) glass 1

air
must be in correct order 1

closer the particles faster the speed
answer must show a comparison

or

particles in glass closest in air furthest apart
accept the denser the material the faster the sound travels

or

sound travels faster in solids than gases
incorrect explanation negates credit 1

(b) (i) grasshopper

(ii) ultrasound
accept ultrasonic 1

(c) all of reflected pulse closer than given in original diagram
*accept a cluster of pulses ignore a reflected pulse in original position
any pulse drawn to right of original negates credit* 1

reflected pulse smaller than emitted but greater than 1 square high
accept cluster of pulses provided one part fulfils height criteria 2

[7]

Q2.

(a) Reflection correct
Normal incidence correct in and out
Correct refraction in
Parallel ray out

each for 1 mark

4

- (b) (i) Each ray correctly refracted in
 $1 + 1 = 2$

7

- (ii) Wavefronts perp sides
Wavefronts closer

(Cannot score wavefront marks if refracted rays clearly wrong)

- (iii) Speed reduces
Starting at B
Then D

each for 1 mark

- (c) TIR correct
gets 2 marks

Else rough reflection
gets 1 mark

2

[13]