

Name of the Student: _____

Max. Marks : 18 Marks

Time : 18 Minutes

Q1.

The table gives the frequencies of sound that different animals can hear.

Animal	Lowest frequency it can hear in Hz	Highest frequency it can hear in Hz
Human	64	23 000
Dog	67	45 000
Mouse	1 000	91 000
Rat	200	76 000
Cat	45	64 000
Tuna	50	1 100
Canary	250	8 000
Chicken	125	2 000

- (a) (i) Which animal can hear the lowest sound frequency?

(1)

- (ii) Which animal can hear the smallest range of frequencies?

(1)

- (b) (i) What is the name given to sound frequencies higher than those that humans can hear?

(1)

- (ii) Give
- one**
- industrial use of this type of sound.

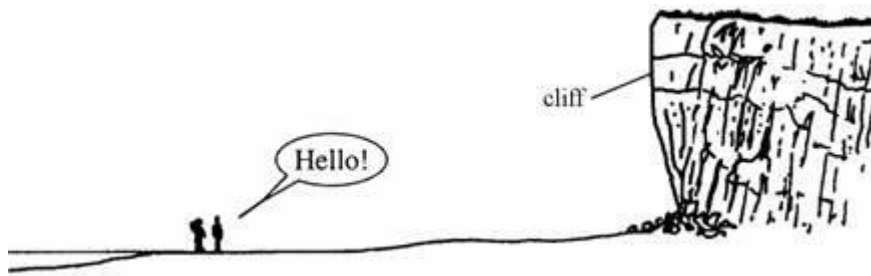
(1)

(Total 4 marks)

Q2.

Two friends are standing on a beach.

When they shout they can hear themselves a second later.



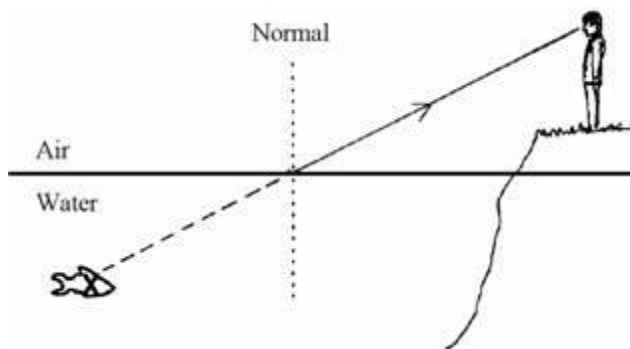
Explain, as fully as you can, why this happens.
(You may answer on the diagram if you want to.)

(Total 2 marks)

Q3.

A man is walking along the bank of a river.

He sees a fish which seems to be at X.



- (a) Show, on the diagram, where the fish **really** is.

Complete the ray of light which goes from the fish into the man's eye.

(2)

- (b) Complete the sentence.

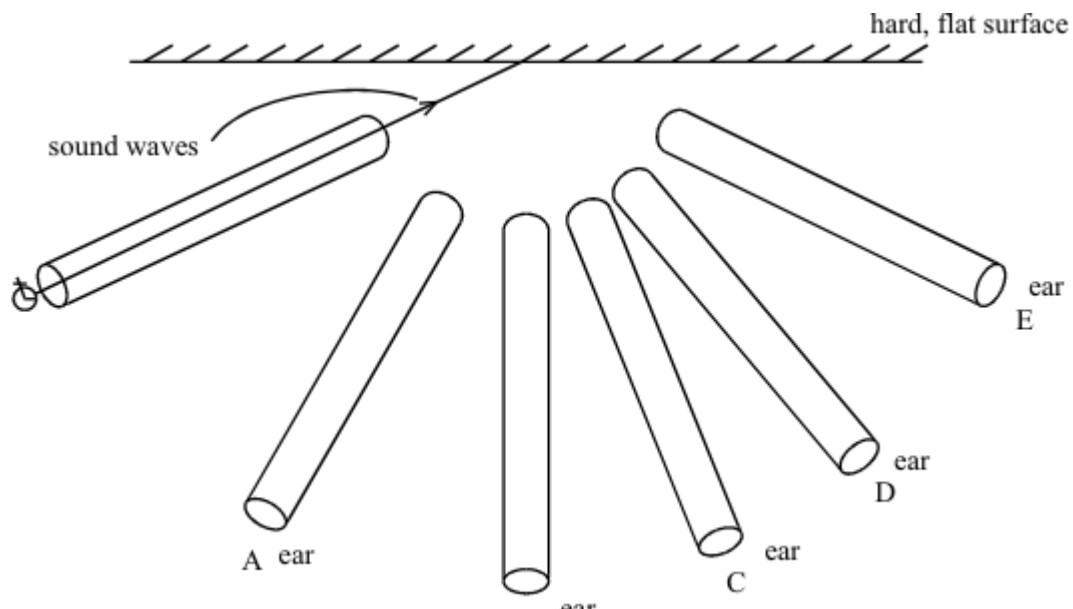
The ray of light is _____ as it passes from the water into the air.

(1)

(Total 3 marks)

Q4.

A hard, flat surface reflects sound just like a plane (flat) mirror reflects light.



You want to hear the reflection (echo) of the ticking watch through a tube.

Which is the best position to put the tube?

Choose from positions A-E on the diagram _____

(You may draw on the diagram if you want to.)

(Total 2 marks)

Q5.

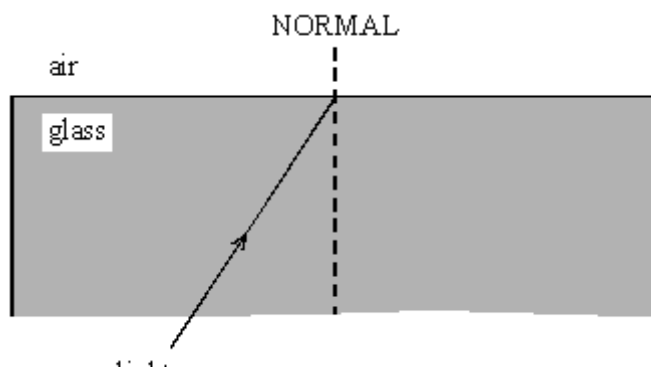
The diagram shows some of the kinds of waves in the electromagnetic spectrum. Choose words from this list to complete the empty boxes on the diagram.

alpha radiation		infrared radiation		radio waves		X-rays
Shortest wavelength						Longest wavelength
gamma radiation		ultraviolet radiation	light		microwaves	

(Total 3 marks)

Q6.

The diagram shows a ray of light travelling through a glass block.



- (a) Complete the diagram to show what happens to the ray of light when it comes out of the glass.

(2)

- (b) Explain why this happens to the ray of light.

(2)

(Total 4 marks)