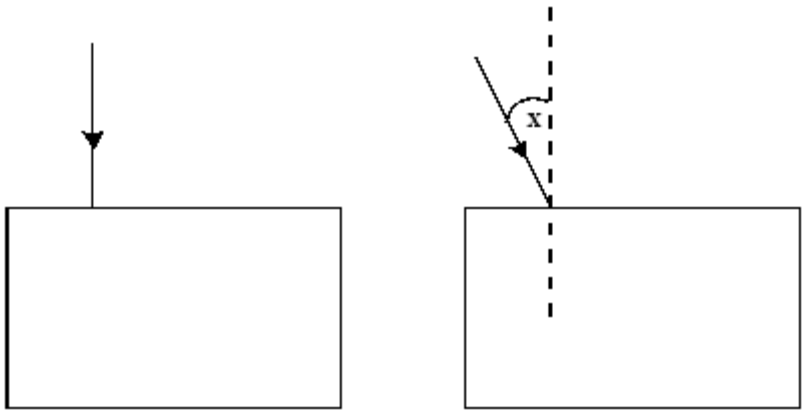
Name of the Student:_____
Max. Marks : 17 Marks **Time : 17 Minutes**

Q1.

(a) The diagrams show rays of light. Each ray strikes a surface of a glass block.

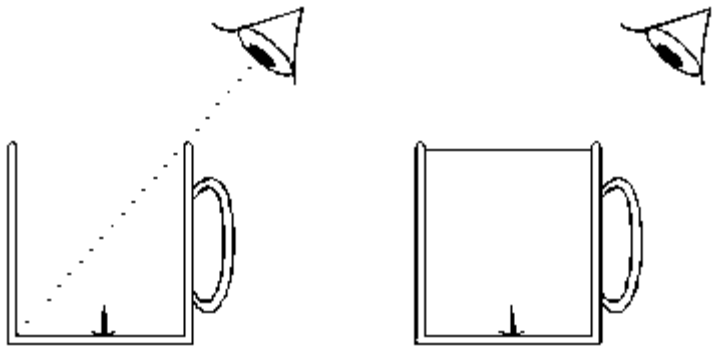


(i) On the diagram draw the path of each ray through the glass block and out into the air again.

(ii) Label another angle on the diagram which is equal to the angle marked **X**. Label this angle **Y**.

(4)

(b) The diagrams show two beakers. Both beakers have a drawing pin inside as shown.



The first beaker is empty. The eye cannot see the drawing pin.
The second beaker is full of water and the eye can see the drawing pin.

Explain how the eye is able to see the drawing pin in the second beaker. You may add to the diagram if it helps your answer.

_____

Downloaded from www.merit-minds.com

_____

_____

(3)

(Total 7 marks)

Q2.

Most young people can hear sounds in the frequency range 20 Hz to 20 000 Hz.

(a) Tick the box beside the statement which best describes frequency.

the maximum disturbance caused by a wave	☐
the number of complete vibrations per second	☐
the distance between one crest of a wave and the next one	☐
the distance travelled by a wave in 1 second	☐

(1)

(b) Diagram **X** shows a trace on an oscilloscope screen.

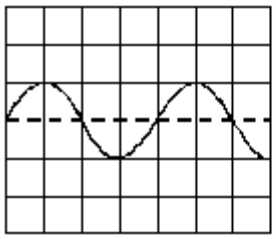


Diagram **X**

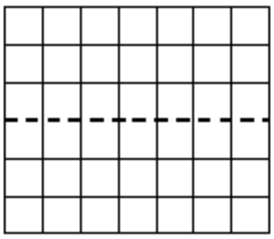


Diagram **Y**

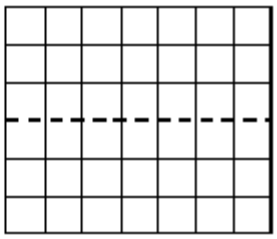


Diagram **Z**

(i) Draw a trace on diagram **Y** which has a higher frequency than that shown in diagram **X**.

(ii) Draw a trace on diagram **Z** which has a larger amplitude than that shown in diagram **X**.

(2)

(c) Choose words from the list below to complete the following sentences.

higher **louder** **lower** **quieter**

(i) A musical note with a high frequency sounds _____ than one with a low frequency.

(ii) A noise of small amplitude sounds _____ than one with large amplitude.

(2)

(Total 5 marks)

Q3.

The diagram shows a wave travelling along a rope.

Downloaded from www.merit-minds.com



(a) On the diagram:

(i) show the wavelength and label it **W**;

(ii) show the amplitude and label it **A**.

(2)

(b) The wavelength of the wave is 0. I m. Its frequency is 2 Hz.

Calculate the speed of the wave. Show clearly how you work out your answer and give the unit.

_____

_____

_____

Speed of wave _____

(3)

(Total 5 marks)

Downloaded from www.merit-minds.com