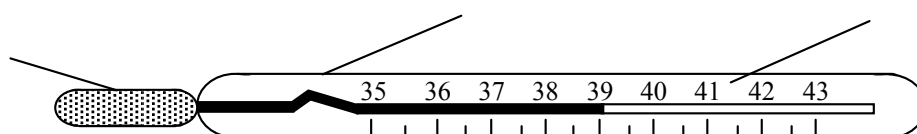


S.G. Physics Homework 1 After Activity 4 Health Physics Unit

Name: _____ **Class:** _____ **Date Due:** _____

1. Correctly fill in the blanks in the following:
The instrument used to measure temperature is called a _____. An instrument to measure temperature can be made from anything which _____ with temperature. For example in a mercury glass thermometer the _____ of the mercury _____ when the temperature increases.
- (2)

2. Correctly label the following diagram of a clinical thermometer,



3. Write down the reading on the above thermometer. _____
- (1.5)
- (0.5)

4. In what ways are an ordinary thermometer and a clinical thermometer different in,
a) the range of temperatures which can be measured

b) how precisely a temperature can be measured

c) the effect on the reading of removing the thermometer from a hot place to a cold place

(3)

5. Put the following statements in the correct order for taking a person's body temperature using a clinical thermometer,
- A read where the end of the mercury is on the scale
 - B remove the thermometer from under the tongue
 - C ensure the mercury is below the kink
 - D shake down the mercury again
 - E place the thermometer under the tongue
 - F wait a few minutes for the thermometer to reach body temperature
- (2)

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6. What can you say about a person's body temperature if they are suffering from
- a) Hypothermia?

b) Fever?

(2)

7. What would happen if a normal lab. thermometer was used to measure the temperature of oil boiling at 240°C ?

(2)

S.G. Physics Homework 2 After Activity 12 Health Physics Unit

Name: _____ **Class:** _____ **Date Due:** _____

1. Through what states of matter can sound travel?

_____ (1)

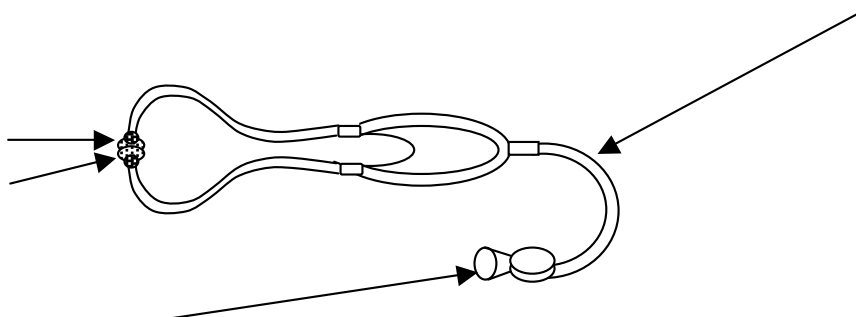
2. What can sound not travel through?

_____ (2)

3. An astronaut on the surface of the moon hits a rock with a hammer. Another astronaut, standing nearby, cannot hear the sound of the blow at all. Explain what this shows about the moon.

_____ (2)

4. Label the following diagram of a doctor's stethoscope,



(1.5)

5. A doctor is using a stethoscope to listen to a patient's heartbeat. Describe how the sounds reach the doctor's ears.

_____ (1)

6. What is 'ultrasound'?

_____ (1)

7. Write a sentence or two to describe one use of ultrasound in medicine.

_____ (2)

8. Complete the following table of typical sound levels,

Source of sound	Typical Level
Whisper	_____
Normal talking	_____
Lorry passing	_____

(1.5)

9. Why should we avoid being too exposed to high levels of sound on a long term basis?

(1)

S.G. Physics Homework 3 After Activity 13 Health Physics Unit

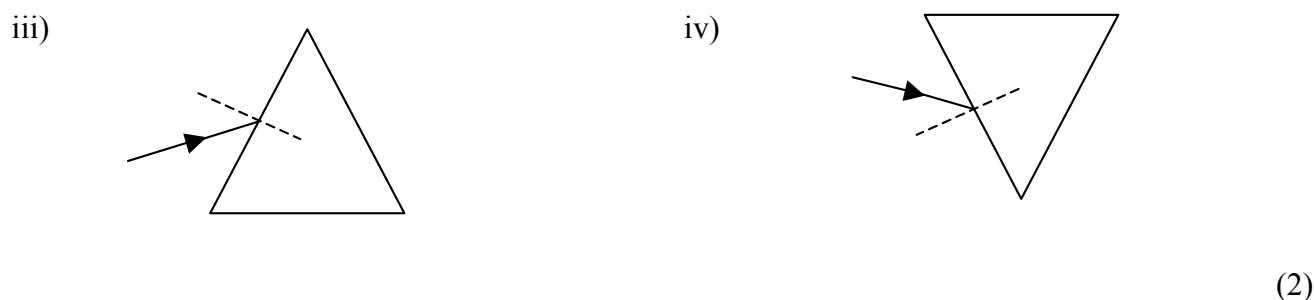
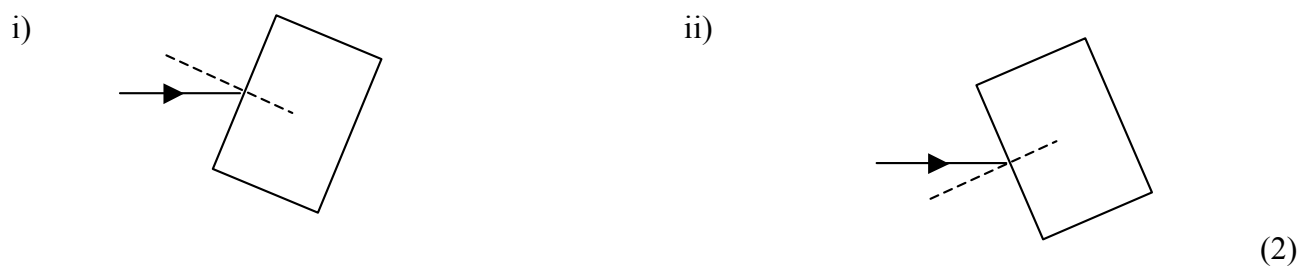
Name: _____ Class: _____ Date Due: _____

1. A ray of light can be 'refracted'
a) What does 'refracted' mean ?

b) In what circumstances will refraction of light happen?

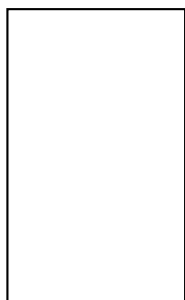
(2)

2. Complete the following diagrams to show the complete path of a ray of red light through the glass blocks,

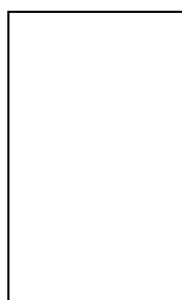


3. Draw the shapes of

a) a convex lens

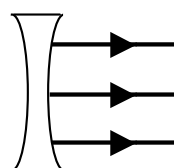
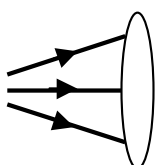
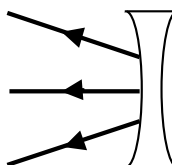
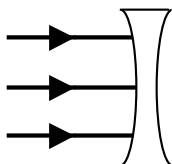
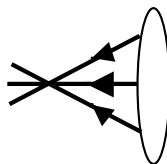
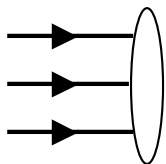


b) a concave lens



(2)

4. Complete the following diagrams of rays of light passing through different lenses,



5. Use these words to complete the passage: 'diverge', 'fatter', 'thinner', 'converge'

A convex lens is _____ in the centre than at the edges. It tends to make rays of light _____.

A concave lens is _____ in the centre than at the edges. It tends to make rays of light _____.

(2)

S.G. Physics Homework 4 After Activity 18 Health Physics Unit

Name: _____ Class: _____ Date Due: _____

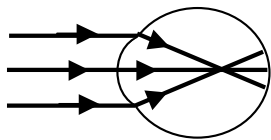
1. Use the following words or phrases to complete the passage (they may be used more than once):
'focus', 'sharp', 'close to', 'far from', 'convex', 'concave'

"The lens in the human eye is a _____ lens. It causes rays of light to _____ on the retina producing a _____ image. If a person is suffering from shortsight they find it easy to focus on objects _____ them but difficult to focus on objects which are _____ of them. The correct type of lens to correct this problem is a _____ lens. If a person is suffering from longsight they find it easy to focus on objects which are _____ them but difficult to focus on objects which are _____ them. The correct type of lens to aid this problem is a _____ lens."

(4)

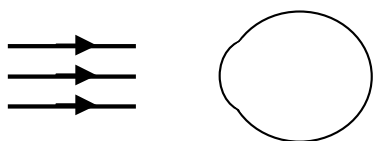
2. Name the eyesight problem shown in the following diagram

(Viewing a distant object)



Problem is _____ (1)

Complete this diagram by drawing

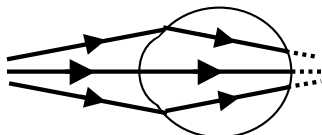


- i) the correct lens to correct the problem
ii) the complete path of the light rays through the eye

(2)

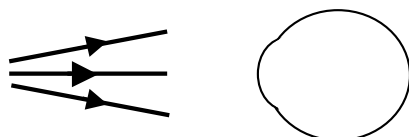
3. Name the eyesight problem shown in the following diagram,

(Viewing a close object)



Problem is _____ (1)

Complete this diagram by drawing



- i) the correct lens to correct the problem
ii) the complete path of the light rays through the eye

(2)

4. A girl wishes to measure the focal length of one of the lenses in her boyfriend's spectacles. She is at home with no special apparatus available – only a ruler. Describe the procedure she should carry out. (Hint:- she is in a room which has light coloured plain walls and a window with a clear view of a distant hillside)

(3)

5. Calculate the power of a lens of focal length 20cm.

(2)

6. Calculate the focal length of a lens of power 6 D.

(2)

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S.G. Physics Homework 5 After Activity 34 Health Physics Unit

Name: _____ **Class:** _____ **Date Due:** _____

1. Write a few sentences explaining any use which doctors make of lasers in medicine.

(2)

2. a) Describe the use of ultra violet rays in medicine.

(2)

b) State a danger of exposure to ultra violet.

(1)

3. What advantage does computer assisted tomography (CAT scan) have over ordinary X-ray photographs?

(1)

4. Sketch the simple model of the atom, indicating clearly the position of each of the following : “proton”, “neutron”, “nucleus”, and “electron”

(2)

5. What is meant by the term “ionisation” of an atom?

(3)

6. Describe a use of radiation in medicine.

(2)

7. A radioactive source has an activity of 96 Bq at 12 noon.
Later at 4pm, its activity is only 6 Bq.
Calculate the half-life of this source.

(3)