

PART A: MULTIPLE CHOICE (10 MARKS)

Choose the best response in each case and place your answer in the appropriate space on your answer sheet.

- Which of the following is not a property of light?
(a) It travels slower than sound.
(b) It travels slower in water than in air.
(c) It travels in a straight line.
(d) It can be bent by refraction.
- By which of these methods is light energy transmitted?
(a) radiation (b) inversion
(c) conduction (d) emission
- What is the order of the colours in the spectrum formed when white light passes through a triangular prism?
(a) red, orange, green, blue, yellow, violet
(b) red, orange, green, yellow, blue, violet
(c) red, orange, yellow, green, blue, violet
(d) red, yellow, orange, green, blue, violet
- Which of the following components is deviated least when white light is passed through a triangular glass prism?
(a) red (b) violet
(c) blue (d) green
- Which of these colours has the shortest wavelength?
(a) red (b) violet
(c) blue (d) green
- Which of the following has more energy?
(a) microwaves (b) infrared light
(c) visible light (d) ultraviolet
- Which of these objects is considered luminous?
(a) a tree (b) a mirror
(c) a window (d) a lit match
- The glowing filament of an electric light bulb is an example of:
(a) incandescence. (b) chemiluminescence.
(c) bioluminescence. (d) fluorescence.
- How would you classify a window that transmits scattered light, so that you only see a fuzzy outline of a person of the other side?
(a) transparent (b) translucent
(c) opaque (d) invisible
- An incident light ray strikes a plane mirror at an angle of 60° (measured with respect to the normal). The angle between the incident and reflected light rays is:
(a) 15° (b) 30°
(c) 60° (d) 120°

PART B: MATCH (5 MARKS)

Match the definition from the 1st column to the best term in the 2nd column and place the matching letter in the appropriate space on your answer sheet.

- Does not produce its own light but reflects it instead.
 - Absorbs UV light and releases it later as visible light.
 - Production of light from a reaction between two chemicals.
 - Electromagnetic waves that we can detect with our eyes.
 - Absorbs UV light and releases it as visible light.
- bioluminescence
 - chemiluminescence
 - diffuse reflection
 - electromagnetic spectrum
 - fluorescence
 - luminous
 - non-luminous
 - phosphorescence
 - regular reflection
 - visible spectrum

PART A: MULTIPLE CHOICE (10 MARKS)

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

PART B: MATCH (5 MARKS)

1	2	3	4	5
---	---	---	---	---

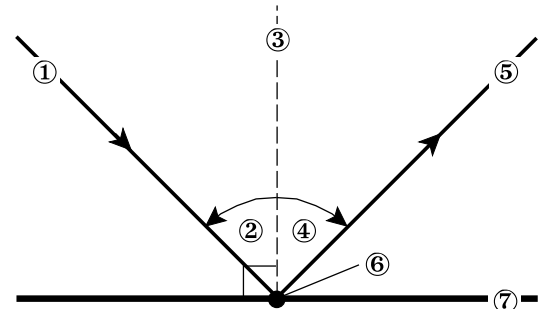
PART C: SHORT ANSWER (10 MARKS)

Answer the following questions in the space provided.

- {7} 1. (a) Match the labels below to the correct item in the diagram and then place the # in the space provided.
 (b) Number and name the remaining items.

- (a) ___ incident angle ___ normal
 ___ reflective material ___ reflected ray

(b) _____



- {2} 2. What are the 2 laws of reflection?

① _____
 ② _____

- {1} 3. Number these em waves in order from lowest energy to highest energy:

___ infrared light ___ x-rays ___ visible light ___ gamma rays ___ microwaves

PART D: PROBLEMS (20 MARKS)

Answer the following questions on a separate sheet of paper. You may use the back of this sheet if you wish.

- {4} 1. What are two ways that radio waves and X-rays are (a) similar and (b) different?
- {3} 2. Which poses more of a danger to human health, very long wavelength radiation or very short wavelength radiation? Why?
- {4} 3. As was discussed in class, incandescent light bulbs are being replaced with CFLs or LEDs?
 (a) What are two reasons incandescent light bulbs are being replaced with CFLs or LEDs?
 (b) What are two potential problems associated with CFLs?
- {5} 4. A huge problem facing aid workers in tropical disaster areas is providing safe drinking water. Scientists are testing a simple idea: fill a clear plastic water bottle with water, put on the cap, and let it sit in direct sunlight for a day.
 (a) Explain why this idea might work.
 (b) List one advantage and disadvantage of this method over boiling water or adding chemicals.
- {4} 5. Explain, with the help of ray diagrams, why the shadow created by your hand on a wall grows larger when you move your hand closer to the light source.