

# Brain POP ELECTROMAGNETIC SPECTRUM

Date: \_\_\_\_\_

Name: \_\_\_\_\_

Class: \_\_\_\_\_

1 How are different types of radiation arranged along the electromagnetic spectrum?

- A By how fast they travel
- B By their sources
- C By the amount of energy they carry
- D By how radioactive they are





2 What is the difference between a wave and a particle?

- A A particle is a discrete unit of energy; a wave is a continuous flow of energy
- B A wave carries energy; a particle carries light
- C A wave moves at the speed of light; a particle can move at a range of speeds
- D A wave carries electricity; a particle carries a magnetic charge

3 Place the following types of EM radiation in order, from lowest energy to highest energy: A) Visible light; B) Gamma rays; C) Radio waves


- A A, C, B
- B C, A, B
- C B, C, A
- D C, B, A

4 Which of the following transmits information using microwaves?


- A 
- B 
- C 
- D 

5 Astronomers often scan the sky using devices called radio telescopes. What can you conclude about these devices?

- A They send radio broadcasts out to distant stars and planets
- B They pick up the radio waves emitted by stars
- C They are less powerful than optical telescopes
- D They can detect ultraviolet radiation

6  Tim mentions that infrared radiation can be used to take special pictures called thermographs. "Graph" means "image." What can you infer about the prefix "thermo"?

- A It means "light"
- B It means "energy"
- C It means "heat"
- D It means "radio"

7  What might happen if the ozone layer did not block the sun's ultraviolet rays?

- A Humans would be able to see in the ultraviolet range of the EM spectrum
- B Devices that use electromagnetic radiation would no longer work
- C The surface of the earth would be much hotter
- D Rates of skin cancer would skyrocket

8 Which word best describes gamma rays?

- A Weak
- B Destructive
- C Visible
- D Harmless

9 What do all forms of electromagnetic radiation have in common?

- A Their strength
- B Their speed
- C Their wavelength
- D Their frequency

10 What produces electromagnetic radiation?

- A Electrons changing energy levels
- B Electrons bonding with other atoms
- C Electrons leaving the atomic nucleus
- D Electrons becoming protons or neutrons