

Name: _____

Date: _____

Complete the passage by filling in the blank with the most appropriate sentence.

1. Electromagnetic radiation is a self-propagating wave of the electromagnetic field that carries momentum and radiant energy through space. It encompasses a broad spectrum, classified by frequency, ranging from radio waves and microwaves through infrared and visible light to ultraviolet, X-rays, and gamma rays. All forms travel at the speed of light in a vacuum and exhibit wave-particle duality. Electromagnetic radiation is produced by accelerating charged particles, such as those from the Sun and other celestial bodies, or generated artificially for various applications. ---- Radio waves enable broadcasting and wireless communication, infrared is used in thermal imaging, and higher-energy radiation is applied in medical imaging, cancer treatment, and industrial inspection. Higher-energy electromagnetic radiation, especially ultraviolet and above, has been associated with negative health effects.

- A)** Quantum electrodynamics is the theory of how electromagnetic radiation interacts with matter on an atomic level rather than across its practical spectrum.
- B)** Its interaction with matter depends on wavelength, influencing its uses in communication, medicine, industry, and scientific research.
- C)** These diagnostic protocols therefore require every exposure to be measured against the laboratory standards established for those particular instruments.
- D)** All wavelengths interact with matter in exactly the same way, so differences in energy never influence their effects or practical uses.
- E)** Maxwell's equations were later confirmed by Heinrich Hertz through experiments with radio waves, marking an important episode in the history of physics.

2. In clinical psychology and well-being, mindfulness is the cognitive skill of, or state reached by, intentionally maintaining moment-by-moment awareness of bodily sensations, feelings, thoughts, and immediate surroundings with a non-judgmental or equanimous attitude. The term derives from the Pali word sati, a significant element of Buddhist traditions, and incorporates elements from several Buddhist meditation techniques. Mindfulness is a secularized form of meditation shaped by eastern spiritual traditions and western psychology. In 1975 it was introduced in western medicine by Herbert Benson and integrated into health programs and psychotherapy by Jon Kabat-Zinn, Zindel Segal, and Mark Williams. ---- Since the 1990s, secular mindfulness meditation has gained broad popular acceptance in the West.

- A)** The Pali word sati carries a strong connotation of memory and has long been interpreted through debates about recollection, awareness, and ethical judgment.
- B)** Those clinicians rejected therapeutic applications and confined mindfulness to religious settings, thereby preventing its adoption in western psychology, psychiatry, and public health.
- C)** These disputed laboratory failures led researchers to abandon mindfulness interventions, even though the measurement standards behind those experiments had not yet been established.
- D)** The English term mindfulness was recorded centuries before it acquired a specifically western Buddhist context in modern discussions of meditation, religion, and health.
- E)** They and others in clinical psychology and psychiatry have developed a number of therapeutic applications based on mindfulness interventions for helping people experiencing a variety of psychological conditions.