

33 Lecture - PHY101

Important Mcqs

What is the speed of an electromagnetic wave in a vacuum?

- A) 3×10^8 m/s
- B) 1×10^8 m/s
- C) 5×10^8 m/s
- D) 2×10^8 m/s

Answer: A) 3×10^8 m/s

Which of the following electromagnetic waves has the highest frequency?

- A) Microwaves
- B) X-rays
- C) Radio waves
- D) Infrared waves

Answer: B) X-rays

What is the relationship between the wavelength and frequency of an electromagnetic wave?

- A) Inversely proportional
- B) Directly proportional
- C) No relationship
- D) Random relationship

Answer: A) Inversely proportional

What type of electromagnetic waves are used in communication systems such as cell phones and radios?

- A) Microwaves
- B) X-rays

C) Radio waves

D) Infrared waves

Answer: C) Radio waves

What is the range of frequencies for visible light?

A) 400 nm to 700 nm

B) 100 nm to 400 nm

C) 700 nm to 1000 nm

D) 1 nm to 100 nm

Answer: A) 400 nm to 700 nm

What is the relationship between the electric and magnetic fields in an electromagnetic wave?

A) They are perpendicular to each other

B) They are parallel to each other

C) They are randomly oriented

D) They do not exist in electromagnetic waves

Answer: A) They are perpendicular to each other

What is the electromagnetic spectrum?

A) The range of all possible frequencies of electromagnetic waves

B) The range of all possible wavelengths of electromagnetic waves

C) The range of all possible amplitudes of electromagnetic waves

D) The range of all possible speeds of electromagnetic waves

Answer: A) The range of all possible frequencies of electromagnetic waves

Which of the following is not an electromagnetic wave?

A) Sound waves

B) X-rays

C) Gamma rays

D) Ultraviolet rays

Answer: A) Sound waves

What is the energy of an electromagnetic wave proportional to?

A) Its frequency

B) Its wavelength

C) Its amplitude

D) Its speed

Answer: A) Its frequency

What is the relationship between the energy of an electromagnetic wave and its frequency?

A) Directly proportional

B) Inversely proportional

C) No relationship

D) Random relationship

Answer: A) Directly proportional