

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 1) When there is a change in the magnetic field in a closed loop of wire 1) _____
A) electromagnetic induction occurs.
B) a voltage is induced in the wire.
C) a current is created in the loop of wire.
D) all of these
E) none of these
- 2) Voltage can be induced in a wire by 2) _____
A) moving the wire near a magnet.
B) changing the current in a nearby wire.
C) moving a magnet near the wire.
D) Choices A, B, and C are all true.
E) None of the above choices are true.
- 3) A wire moving at right angles to a magnetic field has NO induced voltage 3) _____
A) if it is made of copper.
B) if the wire is covered with insulation.
C) if it is moving slowly.
D) if it is moving very fast.
E) None of the above choices are correct.
- 4) If a magnet is pushed into a coil, voltage is induced across the coil. If the same magnet is pushed 4) _____
into a coil with twice the number of loops
A) twice as much voltage is induced.
B) the same voltage is induced.
C) four times as much voltage is induced.
D) one half as much voltage is induced.
E) none of these
- 5) A device that transforms electrical energy to mechanical energy is a 5) _____
A) magnet.
B) generator.
C) motor.
D) transformer.
E) none of these
- 6) Most of the waves in the electromagnetic spectrum are 6) _____
A) blue light. B) invisible. C) green light. D) red light.
- 7) Electromagnetic waves consist of 7) _____
A) oscillating electric and magnetic fields.
B) high-frequency gravitational waves.
C) compressions and rarefactions of electromagnetic pulses.
D) particles of light energy.

- 8) The source of all electromagnetic waves is 8) _____
A) crystalline fluctuations.
B) accelerating electric charges.
C) vibrating atoms.
D) changes in atomic energy levels.
E) none of these
- 9) Which of these electromagnetic waves has the shortest wavelength? 9) _____
A) ultraviolet waves
B) radio waves
C) X-rays
D) infrared waves
E) light waves
- 10) Compared to ultraviolet waves, the wavelength of infrared waves is 10) _____
A) longer. B) shorter. C) the same.
- 11) If an electric charge is shaken up and down 11) _____
A) a magnetic field is created.
B) sound is emitted.
C) light is emitted.
D) its mass decreases.
E) electron excitation occurs.
- 12) Which of the following is fundamentally different from the others? 12) _____
A) light waves
B) sound waves
C) radio waves
D) gamma rays
E) X-rays
- 13) Compared to its average speed in air, the average speed of a beam of light in glass is 13) _____
A) the same. B) more. C) less.
- 14) Materials generally become warmer when light is 14) _____
A) transmitted by them.
B) absorbed by them.
C) reflected by them.
D) all of these
E) none of these
- 15) Sunburns are produced by 15) _____
A) infrared light.
B) visible light.
C) ultraviolet light.
D) all of these
E) none of these

- 16) Color depends on what characteristic of light? 16) _____
A) its amplitude B) its frequency C) both of these
- 17) The color of an opaque object is the same as the light that is 17) _____
A) absorbed.
B) reflected.
C) transmitted.
D) all of these
E) none of these
- 18) What color light is transmitted by a piece of blue glass? 18) _____
A) yellow B) blue C) orange D) red E) white
- 19) The brightest color emitted by the sun is 19) _____
A) violet.
B) orange.
C) yellow-green.
D) red.
E) green-blue.
- 20) Which will warm up quicker in sunlight? 20) _____
A) a piece of colored glass
B) a piece of clear glass
C) both the same

Answer Key

Testname: CH25,26,27

- 1) D
- 2) D
- 3) E
- 4) A
- 5) C
- 6) B
- 7) A
- 8) B
- 9) C
- 10) A
- 11) A
- 12) B
- 13) C
- 14) B
- 15) C
- 16) B
- 17) B
- 18) B
- 19) C
- 20) A