

# MODERN AND SPACE PHYSICS, SOURCES OF ENERGY BASED GENERAL SCIENCE MCQ PRACTICE QUESTIONS AND ANSWERS PDF WITH EXPLANATION

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Created By [Careericons](#) Team

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**Q1.** The process of superimposing signal frequency (i.e., audio wave) on the carrier wave is known as

- a) Reception
  - b) Modulation
  - c) Transmission
  - d) Detection
- 

**Q2.** The service area of space wave communication increases by –

- a) Decreasing the height of receiving antenna
  - b) Increasing the height of both transmitting and receiving antenna
  - c) Increasing the height of transmitting antenna
  - d) Decreasing the distance between transmitting and receiving antenna
- 

**Q3.** In frequency modulation:

- a) The frequency of modulated wave varies as amplitude of modulating wave
  - b) The amplitude of modulated wave varies as amplitude of carrier wave
  - c) The amplitude of modulated wave varies as frequency of carrier wave
  - d) The frequency of modulated wave varies as frequency of modulating wave.
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**Q4.** Light Emitting Diode (LED) converts

- a) electrical energy into light energy
- b) thermal energy into light energy

- c) light energy into electrical energy
- d) mechanical energy into electrical energy

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**Q5.** At absolute zero, Si acts as

- a) metal
- b) insulator
- c) non-metal
- d) None of these

**Q6.** Space wave propagation is:

- tropospherical propagation
- sky wave propagation
- line of sight propagation

Which of the above statement(s) is/are correct?

- a) 1 and 3
- b) 2 only
- c) 1 only
- d) 2, 3 and 4

**Q7.** Which of the following cannot be fabricated on an IC?

- a) Inductors and transformers
- b) Diodes
- c) Transistors
- d) Resistors

**Q8.** The transistor are usually made of

- a) metals with high temperature coefficient of resistivity
  - b) metals with low temperature coefficient of resistivity
  - c) metal oxides with high temperature coefficient of resistivity
  - d) semiconducting materials having low temperature coefficient of resistivity
- 

**Q9.** The waves used in telecommunication are

- a) UV
  - b) Microwave
  - c) IR
  - d) Cosmic rays
- 

**Q10.** Consider the following statements: At the present level of technology available in India, solar energy can be conveniently used to :

- Supply hot water to residential buildings.
- Supply water for minor irrigation projects.
- Provide street lighting.
- Electrify a cluster of villages and small towns.

- a) 2 and 4 are correct
  - b) 1 and 3 are correct
  - c) 1, 2, 3 and 4 are correct
  - d) 1, 2 and 3 are correct
- 

**Q11.** The neutron, proton, electron and alpha particle are moving with equal kinetic energies. How can the particles be arranged in the increasing order of their velocities?

- a) proton-electron-neutron-alpha pararticle
- b) electron-proton-neutron-alpha pararticle
- c) alpha particle-neutron-proton- electron
- d) neutron-proton-electron-alpha pararticle

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**Q12.** Which one of the following is correct? The wavelength of the X-rays

- a) is longer than the wavelength of the yellow sodium light
- b) is longer than the wavelength of radio waves
- c) is longer than the wavelength of sound waves
- d) is of the order of 0.1 nanometer

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**Q13.** The active component in an IC are

- a) Capacitors
- b) Transistors and diodes
- c) Resistors
- d) None of these

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**Q14.** Einstein's photoelectric equation states that  $h\nu = W_0 + E_k$  in this equation,  $E_k$  refers to the

- a) Mean kinetic energy of the emitted electrons
- b) Maximum kinetic energy of the emitted electrons
- c) Kinetic energy of all the emitted electrons
- d) Minimum kinetic energy of the emitted electrons

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**Q15.** \_\_\_\_\_ is used as a fuel in space ships.

- a) Alcohol
  - b) Petrol
  - c) Hydrogen
  - d) Diesel
-

## Answers to the above questions :

**Q1. Answer: (b)**

**Q2. Answer: (b)**

Maximum range of space wave propagation

$$d = \sqrt{\frac{2}{3}} \times 1.23 \sqrt{H_t + H_r}$$

?  $d \propto \sqrt{H_t}$  and  $d \propto \sqrt{H_r}$

?  $d$  increases if  $H_t$  and  $H_r$

i.e. height of transmitting and receiving antenna increases.

**Q3. Answer: (a)**

The process of changing the frequency of a carrier wave (modulated wave) in accordance with the audio frequency signal (modulating wave) is known as frequency modulation (FM).

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**Q4. Answer: (a)**

**Q5. Answer: (b)**

**Q6. Answer: (a)**

Space wave propagation is troposphpherical propagation and line of sight propagation.

**Q7. Answer: (a)**

**Q8. Answer: (c)**

**Q9. Answer: (b)**

**Q10. Answer: (c)**

**Q11. Answer: (c)**

**Q12. Answer: (d)**

**Q13. Answer: (b)**

**Q14. Answer: (b)**

In the given relation  $E_k$  stands for maximum K.E. of emitted photoelectron.

**Q15. Answer: (c)**

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