

## Examrace

### Competitive Exams: Physics MCQs (Practice\_Test 26 of 35)

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1. The given figure shows the waveforms for two inputs A and B and that for the output Y of a logic circuit. The logic circuit is
  - a. an AND gate
  - b. an OR gate
  - c. a NAND gate
  - d. an Exclusive OR gate
2. ◦ **Assertion (A)** : p-n junction diodes can be used even at ultra high frequencies.
  - **Reason (R)** : Capacitance reactance of a p-n junction diode increases as frequency increases.
    - a. Both A and R are true and R is the correct explanation of A
    - b. Both A and R are true but R is not a correct explanation of A
    - c. A is true, but R is false
    - d. A is false but R is true
3. ◦ **Assertion (A)** :  $e/m$  of beta particles is not constant.
  - **Reason (R)** : Velocities of beta particles are quite high and are comparable to the velocity of light.
    - a. Both A and R are true and R is the correct explanation of A
    - b. Both A and R are true but R is not a correct explanation of A
    - c. A is true, but R is false
    - d. A is false but R is true
4. ◦ **Assertion (A)** : In Compton effect, the scattered photon has more energy than the incident photon.
  - **Reason (R)** : Energy and momentum are conserved during the scattering of a photon by an electron.

- a. Both A and R are true and R is the correct explanation of A
  - b. Both A and R are true but R is not a correct explanation of A
  - c. A is true, but R is false
  - d. A is false but R is true
5. ◦ **Assertion (A)** : When a sound wave propagates through air, the displacements take place in the direction of propagation.
- **Reason (R)** : Sound waves can be polarized as in the case of light rays.
  - a. Both A and R are true and R is the correct explanation of A
  - b. Both A and R are true but R is not a correct explanation of A
  - c. A is true, but R is false
  - d. A is false but R is true
6. ◦ **Assertion (A)** : A convex lens suffers from chromatic aberration.
- **Reason (R)** : All parallel rays passing through a convex lens do not come to a focus at the same point.
  - a. Both A and R are true and R is the correct explanation of A
  - b. Both A and R are true but R is not a correct explanation of A
  - c. A is true, but R is false
  - d. A is false but R is true