

## Physics - 12th Class Physics Full Book Short Questions Preparation

Q 1. Willy illoadiatold all adda ill tild dold of fladical readtol i	Q1.	Why	moderators	are used	d in the	core of	nuclear reactor?
--	-----	-----	------------	----------	----------	---------	------------------

- **Ans 1:** The moderator ae used in the core to slow the neutrons down so that they can be captured and keep the chain reaction going.
- Q2. What is the root mean square value of current? Explain.
  - **Ans 1:** The square root of mean square values of current is called root mean square value of current. The average value of current over a cycle is zero but the power delivered during a cycle is not zero because power is I<sup>2</sup>R and the value are positive even for negative values of I.
- Q3. Write a note on LED.
  - **Ans 1:** Light emitting diode are made from the special semiconductor such as gallium arsenide and gallium arsenide phosphide in which the potential barrier between p and n side is such that when electrons combines with a hole during forward biased conduction, a photon of visible light is emitted.

LED are used in 7-segment display, small light sources etc.

- Q4. What is the conventional current? How does it differs from electric current?
  - **Ans 1:** The current flow due to positive charges from a point at higher potential to a point at lower potential is called conventional current. It is due to positive charges while electric current is due to negative charges i.e electrons.
- Q5. What are the advantages of laser over ordinary light?
  - Ans 1: Laser light has many advantages over ordinary light such as laser light is
    - 1. Coherent
    - 2. Intense
    - 3. Monochromatic
    - 4. Unidirectional
- Q6. State uncertainty principle.
  - **Ans 1:** The product of uncertainty in the measurement of momentum and uncertainty in the measurement of position of an electron is approximately equal to Planck's constant.
  - The product of uncertainty in the measurement of energy and uncertainty in the measurement of time of an electron is approximately equal to Planck's constant.

- Q7. What is meant by para and ferromagnetic substance?
  - **Ans 1:** The orbits and the spin axes of the electrons in an atom are so oriented that their field spot each other and the atom behaves like a tiny magnet. Substance with such atoms are called paramagnetic substance e.g iron.

There are some solid substance in which the atom cooperate with each other in such a way so as to exhibit a strong magnetic field there are called ferromagnetic substance.

- Q8. Photoelectric effect give the evidence of the particle nature of light, Explain it how?
  - **Ans 1:** If light were simple a wave like phenomena ,then increasing the intensity and thereby increasing the total energy failing on the surface would be expected to eventually provide enough energy to release electron no matter what the frequency .Furthermore in the classical picture one would expect the maximum energy of the emitted electrons to depend on the intensity of light—but it does not.So this is evidence that light behaves as if it were a particle.
- Q9. Give two applications of gated in control system.
  - **Ans 1:** Gates are widely used in control system. They control the function of the system by monitoring some physical parameters such as temperature ,pressure or some other physical quantity of the system, Sensors are required to operate gates.
- Q10. State the right hand palm rule.
  - **Ans 1:** If the middle finger of the right hand points in the direction of the magnetic field the thumb in direction of current, the force on the conductor will be normal to the palm towards the reader.
- Q11. Define Half line and discuss its dependence.
  - Ans 1: The half line T<sub>1/2</sub>of a radioactive elements is that period in which half of the atom decay.

Dependence: The number of decaying atoms is proportional to the number of atoms present in the beginning of the period and is proportional to time interval.

- Q12. In a transformer there is no transfer of charge from the primary to the secondary. How is then the power transferred?
  - **Ans 1:** The power will be transferred because the two coils of transformer are magnetically linked i.e, the change of flux through one coil is linked with the other coil.
- Q13. What happen to the current of a circuit if a load resistance of the circuit is much less than the power transferred?
  - **Ans 1:** The greater the load the larger the current is supplied by the generator, When the load resistance of the circuit is much less, small current is supplied by the generator.
- Q14. Write down use of laser in industry.
  - Ans 1: It can be used for telecommunication in fibre optics. It is used to read bar codes.

lt is	used	to	generate	3D	image	of ob	iects b	y holography.

Q15. Write two properties of electric field.

**Ans 1:** 1.Electric field line originate from positive charge and end om negative charges.

2. The tangent to a field line at any point gives the direction of the electric field intensity at the point.

Q16. How the beam of electron is focused on the screen of CRO?

**Ans 1:** CRO works by deflecting beam of electrons as they pass through uniform electric field between the two sets of parallel plates, The deflecting beam then falls on a fluorescent screen where it makes a visible spot.

Q17. If nucleus has a life of one year, does this mean that it will be completely decayed after two years?

Ans 1: No it will not decay completely after two years.

Numbers of atom at initial stage =No

number of atoms decayed after first year =1/2N<sub>o</sub>

Q18. How alpha and beta may ionize an atom without directly hitting the electrons?

**Ans 1:** As alpha and beta are electrically charged particle, so they can cause ionization without hitting an atom either by, repellings the electron of target particle.

Q19. Distinguished between magnetic flux and magnetic flux density.

**Ans 1:** Magnetic Flux: The number of magnetic lines of force passing through certain elements of area is called magnetic flux. Magnetic flux is a scalar quantity.

Ans 2: Magnetic flux density: The magnetic flux per unit area of a surface perpendicular to magnetic field is called magnetic flux density.

Q20. Define elastic limit and Yield point.

**Ans 1:** The greatest stress that a material can endure without any permanent deformation is called elastic limit. This kind of behavior is called elasticity.

Yield point: The point on the stress-strain curve beyond which if stress is further increased then permanent deformation takes place in the given specimen. This is called yield point.