Physics - ICS Part 2 Physics Full Book Short Questions Preparation

Q1. Why does no current pass through Galvanometer in a balanced wheat stone bridge although the keys in the circuit are closed ?

Ans 1: No current pass through the galvanometer when wheat stone bridge is balanced.Because at this stage ,both the terminals of the galvanometer are at the same potential.Hence no current will flow through it.

Q2. Does the dilation mean that time really passes more slowly in moving system or that it only seems to pass more slowly.Explain briefly.

Ans 1: According to dilation formula

$t=\sqrt{1-\frac{v^2}{c^2}}$"

This relation show that a clock moving with respect to an observe appears to move slow then it does when it is at rest with respecttohim.So the moving clocks just appears to run slowly to the observer at rest.Hence time dilation is an apparent change and it only seems to pass more slowly but not actually.

Q3. what is Spectroscopy?

Ans 1: It is that branch of physics which deals with the production,measurement and interaction of electromagnetic radiation emitted or absorbed by atom is called Spectroscopy.

Q4. What is responsible factor for production of magnetic field in an atom?

Ans 1: As Ampere suggested,a magnetic field is produced whenever an electrical charge in motion.The spinning and orbiting of the electrons of an atom produce a magnetic field as does electrical current flowing through a wire.

Q5. If you swallowed a alpha source and beta source ,which would be more dangerous to you ?Explain

Ans 1: As alpha particle have greater energy and ionizing power than beta particle,so alpha particle are more dangerous than beta particle.
Critical volume:The volume of critical mass is called critical volume.

Q6. Can an electron at rest be set in motion with magnet?Explain

Ans 1: No an electron at rest can not be set in motion with a magnet because at rest electrons only have electric field which can not interfere with magnetic field to cause any force which can produce motion in electrons.

Q7. Define polymeric solid with example.

Ans 1: Polymers are solid materials with a structure that is intermediate between order and disorder,They can be classified as

partially or poorly crystalline solids.For example plastic,rubber.

Q8. How the current flows in forward and reverse biased diode?

Ans 1: In forward biasing,the external potential difference supplies energy to free electrons in n-region and holes in p-region to overcome the potential barrier,a current of the orderof a few milli-amperes begins to flow across the pn junction.
In reverse biasing ,no current flow due to the majority charge carrier,However a very small current of the order of of few micro amperes flow across the junction due to minority charge carriers.It is also known as reverse current or leakage current.

Q9. What is wave particle duality?

Ans 1: It says that light has dual nature;it travels in the form of waves but interacts with matter in the form of energy particle called as photon.e.g in interference ,reflection and polarization it show the properties of wave nature but in phenomena like pair production and compton's effect light acts as energy particle.

Q10. Define mutual inductance and write at least two factors at which it depends.

Ans 1: The ratio of average emf induced in the secondary to the time rate of changing current in the primary is called mutual inductance.
It depends upon numbers of turn of the coil,area of cross section of the coil closeness of coil and nature of the core materials.

Q11. 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

Q12. Distinguished between AC generator and transformer.

Ans 1: AC generator: AC generator is a device which produce AC voltage by converting mechanical energy into electrical energy.

Ans 2: Transformer: It is and electrical device which acts to change a given alternating emf into larger or smallar AC voltage.

Q13. What do you know by annihilation of matter?

Ans 1: When a positron comes close to an electron,they annihilate and produce two photons in the gamma rays range.It is called annihilation of matter.

Q14. Can an object move with the speed of light?

Ans 1: As an object approaches the speed of light,its masses rises abruptly.If an object tries to travel 186,000 miles per seconds,its mass become infinite and so does the energy required to move it, For this reasons ,no normal object can be travel as fast as or faster than the speed of light.

Q15. If you are moving in a spaceship at very high speed relative to the earth.Would you notice difference(a)In your pulse rate(b)In the pulse rate of people on the earth?

Ans 1:

1. The pulse rate of the person inside the spaceship moving with large velociety will decrease.
2. The pulse rate of the people on the earth with respect to the person inside the spaceship with large velocity will increase.

Q16. Write advantage and disadvantage of FM and AM.

Ans 1: Advantage:

1. FM transmission frequencies are much higher and range between 88 MHz to 108 MHz.AM transmission frequencies range from 540 KHz to 1600 KHz.
2. FM radio waves are affected less by electrical interference than AM radio waves.

Disadvantage:

1. FM have a short range than AM.
2. FM are less able to travel around obstacles such as hills and large buildings.

Ans 2:

Q17. Define electrostatics and electric force,

Ans 1: Electrostatics: The branch of physics which deals with the study of stationary charges is called electrostatics.Electric force: The force which holds the negative and positive charges that make up atoms or molecule is called electric force.

Q18. Can a transformer be used with D.C? Explain

Ans 1: No As transformer works on the principle of electromagnetic induction,which is produced by A.C and not by D.C,To induced a voltage in the secondary coil it is necessary to have magnetic flux change.

Q19. Define electromagnetism and give the name of one device in which electromagnetism is used.

Ans 1: The branch of physics which deals with electricity and magnetism and the interaction between them is known as electromagnetism.
Electromagnetism is used in doorbells,electric motors such as electric fan etc.

Q20. Define volumetric strain.

Ans 1: When the applied stress change the volume,then the change in volume per unit volume is called volumetric strain.