

**XII-STD PHYSICS IMPORTANT THREE MARK QUESTIONS****UNIT-1**

1. What are conductors and insulators?
2. What do you mean by additive nature of charges?
3. State coulomb's law in electrostatics.
4. Define coulomb on the basis of Coulomb's law.
5. Define Electric field intensity. Give its unit.
6. What is an electric dipole? Define electric dipole moment.
7. What is a microwave oven?
8. Define electric potential at a point.
9. Define potential difference.
10. define 1 volt.
11. Define electric flux. Give its unit.
12. State Gauss's law in electrostatics.
13. What is capacitor? Define its capacitance.
14. define 1 farad.
15. What is meant by dielectric polarisation?
16. What is polar molecule? Give examples.
17. What is non-polar molecule? Give examples.
18. What are the uses of capacitors?
19. What is electrostatic shielding?
20. Why is it safer to be inside a car than standing under a tree during lightning?
21. What is carona discharge? Write its uses.

**UNIT-2**

1. Define drift velocity.
2. Define mobility. Write its unit.
3. Define current density.
4. State ohms law.
5. Define resistivity of a material.
6. What is called superconductors?
7. What is called transition temperature?
8. What are the changes observed at transition Temperature when the conductor becomes superconductor?
9. Write any three applications of superconductors.
10. Define temperature coefficient of resistance.
11. State Kirchhoff's law's.
12. Distinguish between emf and potential difference.
13. Distinguish between electric power and electric energy.
14. State faraday's laws of electrolysis.
15. What are the applications of secondary cells?

**UNIT-3**

1. State joules law heating.
2. Why nichrome is used as a heating element?
3. Define Peltier coefficient and write its unit.
4. State Ampere's circuital law.
5. Mention the limitations of cyclotron.
6. State Fleming's left hand rule.
7. Define ampere in terms of force.

8. How we increase the sensitivity of a galvanometer?
9. Difference between Peltier effect and Joule's effect.

**UNIT-4**

1. Define Magnetic flux.
2. What is electromagnetic induction?
3. State Faraday's laws electromagnetic induction.
4. State Lenz's law.
5. State Fleming's right hand rule.
6. Define coefficient of self-induction.
7. Define the unit of self- inductance.
8. Mention the methods of producing induced emf.
9. Define efficiency of a transformer.
10. Define r.m.s value of A.C.
11. What is inductive reactance?
12. What is capacitive reactance?
13. What is resonant frequency in RLC circuit?
14. Define quality factor.
15. Define power factor.
16. D.C ammeter cannot be used for measuring A.C .Why?
17. A capacitor blocks d.c but allows a.c. Why?

**UNIT-5**

1. What are the uses of infrared radiations.
2. What is fluorescence?
3. What is phosphorescence?
4. State Rayleigh scattering law.
5. Why does sky appear blue in color?
6. Why does sun looks reddish at sun set and sunrise?
7. What is Tyndall scattering?
8. What are the Applications of Raman spectrum?
9. State Huygens principle.
10. Write the conditions for total internal reflection to take place.
11. Why is the centre of Newton's ring dark?
12. Distinguish between Fresnel and Fraunhofer diffractions.
13. Write the differences between interference and diffraction .
14. State and Brewster's law.
15. What is Optical Activity?
16. Define optic axis of a crystal.
17. On what factors does the amount of optical rotation Depend?
18. Define specific rotation.

**UNIT-6**

1. State postulates of Bohr atom model.
2. Define ionization potential energy .
3. Define Excitation potential energy.
4. What are X-rays?
5. Difference between hard and soft X-rays?
6. Write down two important facts of the Laue experiment.
7. State Bragg's law
8. State Mosley's law.

9. Write the applications of Mosley's law.
10. What are the characteristics of laser?
11. Write the condition to achieve laser action.
12. Write any three industrial applications of Laser.
13. Write any three medical applications of Laser.
14. What is halogram?

### UNIT-7

1. What is photoelectric effect?
2. Define stopping potential
3. Define threshold frequency.
4. Mention any three applications of photoelectric cells.
5. Mention the uses of electron microscope.
6. What are the limitations electron microscopes?
7. What is the concept of time in classical mechanics?
8. What is the concept of space in classical mechanics?
9. What are inertial and non-inertial frames of reference?
10. State the postulates of special theory of relativity.

### UNIT-8

1. What are Isotopes? Give an example.
2. What are Isobars and Isotones? Give an examples.
3. Define Atomic Mass Unit (a.m.u).
4. What is mass defect?
5. What is binding energy ?
6. Write any three properties of nuclear forces.
7. Define radioactivity.
8. What is  $\alpha$ - decay? Give example.
9. What are half life period?
10. What are half life and mean life?
11. Define curie.
12. How do you classify the neutrons in terms of its kinetic energy.
13. Write any three properties of neutron.
14. What do you mean by artificial radioactivity.
15. What are the uses of control rod in the reactor?
16. What is meant by breeder reactor?
17. What are the uses of nuclear reactors?
18. What are cosmic rays?
19. What is pair production and annihilation of matter?
20. Write a note on leptons.
21. Define Roentgen.
22. Define radio carbon dating?

### UNIT-9

1. What is meant by doping?
2. Write the different methods of doping a semiconductor.
3. What is an intrinsic semiconductor? Give examples.
4. What is an extrinsic semiconductor?
5. What is rectification?
6. What is zener break down?
7. What is light emitting diode? Give any one of its uses.
8. Draw the circuit diagram of NPN CE mode.

9. Draw the circuit diagram of NPN CB mode.
10. Draw the circuit diagram of NPN CC mode.
11. Why CE configuration is preferred over CB configuration for operating transistor as an amplifier?
12. Define input impedance of a transistor in a CE mode.
13. Define output impedance of a transistor.
14. What are the advantages of negative feedback?
15. Give the Barkhausen criteria for oscillations.
16. Define bandwidth of an amplifier.
17. What is an integrated circuit?
18. Mention the advantages of Integrated Circuit (IC).
19. Draw the circuit diagram for an OR gate.
20. Draw the circuit diagram of AND gate using diode.
21. Draw NOT gate using transistor.
22. What are universal gates? Why are they called so?
23. State De-Morgan's theorem.
24. Give the important parameters of OPAMP?
25. Draw the circuit for summing amplifier.
26. Draw the circuit diagram for inverting amplifier using Op- Amp.
27. Draw the difference amplifier using Op-Amp.
28. Mention any three uses of cathode ray oscilloscope.

### UNIT-10

1. What are the different types of radio wave propagation?
2. What is meant by skip distance?
3. What is the necessity of modulation?
4. Define amplitude modulation.
5. Define modulation factor.
6. Define band width
7. Define phase modulation.
8. What is interlaced scanning?
9. Write any three applications of RADAR.
10. What are the advantages of digital communications?
11. What is fax? Mention its use.
12. Mention the three advantages of Fibre optic communication system.
13. Define directivity.

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