

22. Potential energy of dipole $U = -P.E.$
23. Gauss law in electro statics? Importance?
24. State and explain coulomb's Inverse Square law in electricity?
25. Expression for potential due to point charge?
26. Effect of Intensity of light, potential on photo electric current?
27. Describe experiment to study effect of frequency of incident radiation on stopping potential?
28. Explain Rainbow.
29. Discovery of neutron.
30. What is Half life period? How related with decay const?
31. What is Average life? How it is related with decay const?
32. Explain photo diode?
33. Derive expression for Energy stored in Capacity? Special Cases?
34. Expression for Induction on the Axis of current carrying circular coil? Biot savart law
35. LED
36. Hydrogen Spectrum
37. Beat's Formation
38. Electric Intensity due to Point charge
39. Zener Diode Voltage Stabilizer
40. Expression for axial field of Solenoid produces cyclotron.
41. Intensity of Transmitted light when a Polaroid sheet rotated between Polaris.

Difference between

Zener Break down	/	Avalanche break down
✓ Fission	/	fussion
✓ Half wave rectifier	/	full wave rectifier
✓ NAND GATE	/	NOR GATE
Excitation potential	/	ionization potential
Doppler effect	/	applications
Neutron	/	properties

Very Short Answer Questions:

1. Waves	2, 7, 9, 10, 19, 20
✓ Rayoptics	9, 11, 12, 5, 4, 2, 1, 8
✓ Physical optics	1, 3, 4, 5
✓ Electric Charges and field	1, 2, 3, 5, 6, 9, 10
✓ Capacitance and Potential	1, 2, 5, 6, 3
✓ Current electricity	7, 8, 2, 9, 12, 1, 2, 3
✓ Moving charges and Magnetism	1, 7, 8, 10, 11, 4
✓ AC	1, 2, 3, 4, 5, 7, 8, 6, 9
✓ Magnetism, matter	9, 7, 8, 4, 5
✓ 10 Ethr	3, 4, 6, 7, 8, 2
✓ 11. Electromagnetic wave	1, 7, 8, 9, 2, 4
✓ 12. Dual Nature of Matter	4, 8, 2, 3, 6, 5, 7
✓ 13. Atom	6, 7, 14
✓ 14. Nuclei	3, 10, 13, 15, 19
✓ 15. Semiconductor	1, 3, 4, 10, 13
✓ 16. Communication system	1, 2, 3, 4, 5, 6, 7, 8

II - Year Final Question Physics

Long Answers Questions:

1. Explain nuclear reactor? (Problem: 1 micro U : Ans : $9 \times 10^7 S$)
2. Explain Kirchhoff's laws? (Problem: Resistance 4R bent - Ans: R)
3. Torque acting on current carrying loop? Explain working of moving coil galvanometer (MCG) (Problem: - Ans: $G/9,99,999 \Omega$)
4. Potentiometer: determine internal resistance of cell?
 - i) A battery of emf 10v and internal resistance 3R connected to a resistor R. If current in circuit is 0.5 A, calculate value of 'R'
 - ii) In a potentiometer a cell of emf 1.25v gives a balance point 35 cm length of wire. If cell replaced by another cell and balancing shift to 63 cm what is the emf of second cell? Problem : 2 (As: 28 ohm 8.5V)
Problem : 12 (Ans: 2.25V)
Problem : 13 (Ans: 2.6V)
5. Effective capacitance in series, parallel combination of capacitors? (Problem)
6. Doppler effect? 1st Case? (Problem 8 : Ans : 18Hz)
7. Formation of stationary waves in stretched string? Deduce Transverse laws?
A steel wire 0.72 m long has a mass of 5×10^{-3} Kg. If the wire under a Tension of 60N. What is the speed of Transverse wave on the wire?
8. Stationary wave in closed pipe? Relation for the frequencies? A pipe 30cm long is open at both ends. Find the fundamental frequency velocity of sound in air is 330 ms.
9. LCR Circuit? Impedance.
10. State Bohr's postulates? Expression for radius of orbit and energy of e in orbit? Radius of first orbit in H atom 5.3×10^{-11} m. What are the radii in n_1, n_2 orbit?
Problem 1 Ans: 2.2×10^{-10} m
11. Open pipe - Harmonics? Problem 6: ANS: 118Mz
12. Doppler shift? 2nd case? Problem 13 : Ans : 2.06×10^4 N.
13. Radio activity - Decay Law? Problem 13 Ans: (4800 Years)
14. Stellar Energy? Carbon - Nitrogen Cycle

Short Answers Questions:

1. Explain Biot savart law?
2. Working of Transformer.
3. Capacitance in parallel plate capacitor $C = \epsilon_0 A/d$
- 4) *IR, critical angle*
4. Explain Doppler effect in light. Explain red shift, blue shift?
5. Does principle of conservation of energy hold for interference and diffraction explain?
6. Why does setting sun appear in red?
7. Explain mirage?
8. Explain about simple micro scope?
9. Half wave rectifier.
10. Full wave rectifier.
11. Limitations of Bohr atomic model?
12. What is impact parameter and scattering angle?
13. Explain closest approach, impact parameter?
14. Distinguish between Dia, Para, Ferro magnets?
15. Advantage of eddy current?
16. Induced emf in moving conductor $\mathcal{E} = Blv$.
17. Mutual Inductance of two coaxed solenoids?
18. Expression for zero intensity and maximum in Interference. [YDSE]
19. Intensity of dipole on axial line?
20. Intensity of dipole in equatorial line?
21. Couple acting on dipole $\tau = p \times E$.

Problems

- | | |
|--|--|
| 1. Magnetism and matter problem-5 | Ans : 1.732 Nm (VSAQ) |
| 2. Electromagnetic Induction exercise problem
Problem No. 8 | Ans : 4H (4 marks) |
| 3. Dual Nature of matter problem - (5) (examples) | Ans: 2 particle |
| 4. Potential and capacity problem - (2) | Ans: 8×10^{-20} cm |
| 5. Atom
Problem - (1) | Ans: 2.12×10^{-10} m |
| 6. Semiconductors:
Problem (1) | Ans: 40.2 % |
| (2) | Ans : 80.6 % |
| (3) | Ans : 50 |
| 7. Moving charges and magnetism
Problem (1) | Ans 2×10^{-5} N |
| (2) | Ans : G Ω |
| (3) | <hr/> 999999
Ans : 15.8×10^{-7} T. |

ALL THE BEST

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