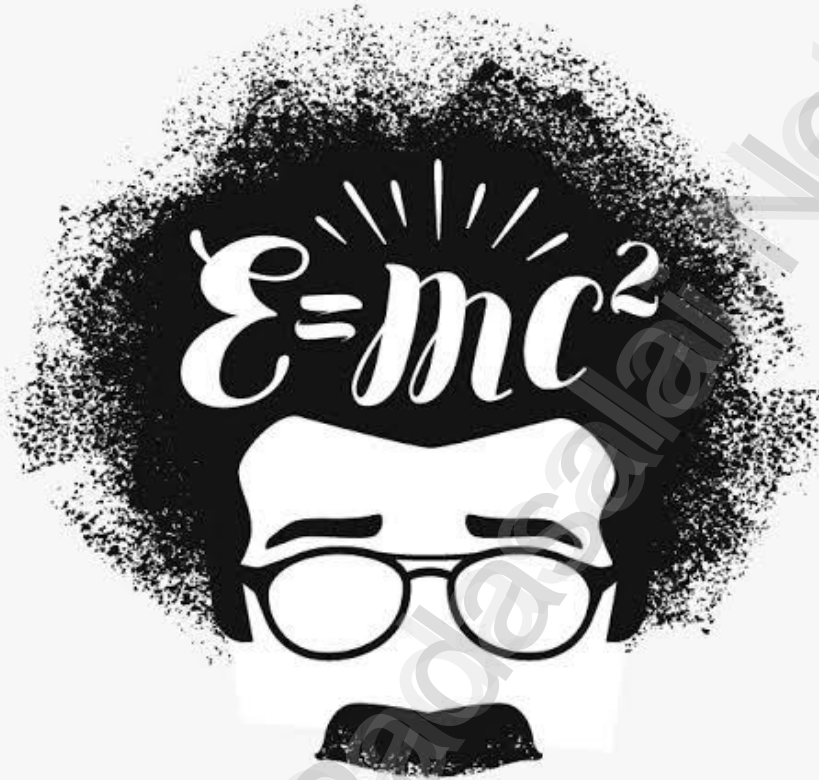


RISHI VLOG'S & EDUCATION

12TH PHYSICS VOL - I QUESTION BANK BASED ON (2022-2023)



VOLUME - I 2MARKS, 3MARKS, & 5MARKS QUESTION BANK

NAME :

CLASS :

SUBJECT :

Unit – 1 (Electrostatics)

2Marks :

1. Define Coulomb's Law. (4)
2. Define One Coulomb. (5)
3. Define Superposition Principle. (9)
4. Define Electric Field & SI unit & Formula. (12)
5. Define Electric Dipole with Examples. (20)
6. Define Electric Dipole Moment & SI unit. (20)
7. Define Microwave Oven. (25)
8. Define Equi-potential Surface. (31)
9. Electric Flux & SI unit & Quantity. (36)
10. State Gauss Law & Formula. (40)
11. Define Electrostatic Shielding. (48)
12. Why Safer to sit Inside the Bus/Car during Lightning. (49)
13. Define Electrostatic Induction. (49)
14. Define Relative Permittivity. (5)
15. Define Electric Potential at a Point. (26)
16. Define Electric Potential Difference. (26)
17. Write Non- Polar Molecules with Examples. (51)
18. Write Polar Molecules with Examples. (52)
19. Define Polarisation. (52)
20. Define Dielectric Strength. (53)
21. Define Capacitance of Capacitor & SI unit. (54)
22. Define Energy Density. (56)
23. State Principle of Van de Graff Generator. (66)
24. State Principle of Lightning Arrestor. (65)

3 Marks:

1. Explain Electric Field due to a Point Charge. (11)
2. Explain Electric Field Lines. (17)
3. Explain Torque Experienced by an Electric Dipole in the Uniform Electric Field. (24)
4. Explain Electric Potential at a Point. (27)
5. Explain Electrostatic Potential Energy for Two Point Charges. (33)
6. Explain Electrostatic Potential Energy for Three Point Charges. (33)
7. Explain Electrostatic Potential Energy of a Dipole in a Uniform Electric Field. (35)
8. Explain Applications of Capacitors. (57)
9. Explain Capacitor Connected in Series. (60)
10. Explain Capacitor Connected in Parallel. (61)

5 Marks:

1. Difference Between Gravitational Force and Coulomb Force. (5)
2. Explain Electric Field due to an Electric Dipole at a Point on the Axial Line. (22)
3. Explain Electric Field due to an Electric Dipole at a Point on the Equatorial Line. (22)
4. Explain Electrostatic Potential at a Point due to an Electric Dipole (With Cases). (30)
5. Explain Electric Field due to Uniform Charged Spherical Shell. (44)
6. Explain Electric Field due to Two Parallel Charged Infinite Sheets. (44)
7. Explain Electric Field due to Charged Infinite Plane Sheet. (43)
8. Explain Electric Field due to an Infinitely Long Charged Wire. (41)
9. Explain Capacitance of a Parallel Plate Capacitor. (54)
10. Explain the Capacitor is Disconnected from the Battery. (57)

11. Explain the Battery Remain Connected to the Capacitor. (58)

12. Explain Van de Graaff Generator. (66)

Unit – 2 (Current Electricity)

2Marks :

1. Define Current. (82)

2. Define Drift velocity. (83)

3. Define Mobility. (84)

4. State Ohm's Law. (87)

5. Define Current Density. (85)

6. Define Resistance. (87)

7. Write Resistivity (or) Electrical resistivity (or) Specific resistivity with SI unit. (88)

8. Write Electrical Conductivity with SI unit. (88)

9. Define Conductance. (87)

10. Define Temperature Coefficient with SI unit. (95)

11. How can you Change the Resistivity of Materials. (96)

12. Define Critical temperature. (96)

13. Define Super Conductor. (96)

14. Define Electric Power. (97)

15. Define Electromotive Force (EMF) with SI unit. (100)

16. Define Potential Difference with SI unit. (100)

17. State Kirchhoff's First rule (or) Current rule (or) Junction rule. (104)

18. State Kirchhoff's Second rule (or) Voltage rule (or) Loop rule. (105)

19. State Joule's Law. (112)
20. Write Joule's Heating Effect. (111)
21. Define Thermoelectric Effect. (114)
22. Define Seebeck Effect. (114)
23. Define Thermopiles. (114)
24. Define Thermocouple. (114)
25. Write Magnitude of the EMF developed in Thermocouple. (114)
26. Define Peltier Effect. (115)
27. Define Thomson Effect. (115)

3 Marks:

1. Write Relation Between Drift velocity & Mobility. (83,84)
2. Explain Macroscopic Ohm's Law. (86)
3. Explain Kirchhoff's Second rule . (105)
4. Explain Joule's Law. (112)
5. Explain Seebeck effect with Diagram. (114)
6. Application of Seebeck Effect. (114)
7. Explain Peltier Effect. (115)
8. Explain Thomson Effect. (115)

5 Marks:

1. Explain Microscopic form of Ohm's Law. (85)
2. Explain Resistors Connected in Series. (90)
3. Explain Resistors Connected in Parallel. (91)
4. Explain Determination of Internal Resistance by using Volt meter.(101)
5. Explain Cells Connected in Series. (102)
6. Explain Cells Connected in Parallel. (103)

7. Explain Wheatstone's Bridge. (106)
8. Explain Meter Bridge. (108)
9. Explain Principle of Potentiometer. (109)
- 10 Explain Comparison of emf of Two cells with a Potentiometer. (110)
11. Explain Measurement of Internal Resistance of a cell by Potentiometer. (111)

Unit-3 Magnetism & Magnetic Effects

of Electric Current

2marks:

1. Define Magnetic Inclination. (128)
2. Define Magnetic Declination. (128)
3. Define Horizontal component of Earth Magnetic field. (128)
4. Define Magnetic Dipole moment. (130)
5. Define Magnetic field & SI unit. (130)
6. Define Magnetic flux & SI unit. (133)
7. Define Magnetic flux density & SI unit. (133)
8. Define Uniform Magnetic field. (133)
9. Define Non-Uniform Magnetic field. (134)
10. State Coulomb Inverse Square law of Magnetism. (135)
11. Define Magnetizing field. (141)
12. Define Magnetic Permeability. (141)
13. Define Relative Permeability. (141)
14. Define Intensity of Magnetization. (141)

15. Define Magnetic Induction. (142)
16. Define Magnetic Susceptibility. (142)
17. State Curie's law. (145)
18. Define Ferromagnetic Domain. (145)
19. State Curie- Wiess law. (147)
20. Define Remanence. (149)
21. Define Coercivity. (149)
22. Define Hysteresis. (149)
23. State Right Hand Thumb rule. (153)
24. State Maxwell Right Hand Screw rule. (153)
25. State Tangent law. (159)
26. Define Magnetic Dipole Moment of Any Current Loop. (160)
27. State End rule. (160)[table3.3]
28. State Right Hand Thumb rule. (160)
29. State Ampere Circuital law. (162)
30. Define Toroid. (166)
31. Define Tesla. (168)
32. State Principle of Cyclotron. (174)
33. Define Limitations of Cyclotron. (175)
34. State Fleming Left Hand rule. (177)
35. Define One Ampere. (179)
36. Define Sensitivity of Galvanometer. (182)
37. Define Figure of Merit of a Galvanometer. (182)
38. Define Current Sensitivity. (182)
39. How can you Increase the Current Sensitivity of a Galvanometer. (182)
40. How can you Decrease the Current Sensitivity of a Galvanometer. (182)

41. How can you Increase the Voltage Sensitivity of a Galvanometer. (182)
42. How can you Decrease the Voltage Sensitivity of a Galvanometer. (182)
43. Define voltage sensitivity. (182)
44. Why Phosphor - Bronze is used for Moving Coil Galvanometer. (182)
45. How can you convert Galvanometer into Ammeter. (184)
46. How can you convert Galvanometer into Voltmeter. (185)

3marks:

1. Explain Properties of Magnetic Lines. (133)
2. Explain Torque acting on a Bar magnet in Uniform Magnetic field. (138)
3. Explain Potential energy of a Bar Magnet in a Uniform Magnetic field. (139)
4. Explain Properties of Diamagnetic materials. (144)
5. Explain Properties of Paramagnetic materials. (145)
6. Explain Properties of Ferromagnetic materials. (146)
7. Explain Hysteresis Loss. (149)
8. Explain Biot Savart law. (154)
9. Explain Current Loop as a Magnetic field. (160)
10. Explain Lorentz Force. (168)
11. Explain Velocity Selector. (173)

5 marks:

1. Explain Properties of Magnet. (130)
2. Explain Magnetic field at a point along the Axial line of the Magnetic dipole. (135)
3. Explain Magnetic field at a point along the Equatorial line of the Magnetic dipole. (137)
4. Explain Magnetic field due to Long Straight Conductor carrying current. (156)

5. Explain Magnetic field produced along the Axis of the Current - Carrying Circular coil. (157)
6. Explain Tangent Law & Tangent Galvanometer. (158)
7. Explain Magnetic Dipole Moment of revolving Electron. (161)
8. Explain Magnetic field due to the Current Carrying Wire of Infinite Length using Ampere's law. (162)
9. Explain Magnetic field due to a long Current Carrying Solenoid. (164)
10. Explain Motion of a charged particle in a Uniform Magnetic field. (170)
11. Explain Cyclotron. (174)
12. Explain Force on a Current Carrying Conductor placed in a Magnetic field. (176)
13. Explain Force Between Two Long Parallel current carrying conductors. (178)
14. Explain Conversion of Galvanometer to an Ammeter. (183)
15. Explain Conversion of Galvanometer to a Voltmeter. (184)
16. Explain Moving Coil Galvanometer. (181)
17. Explain Torque on a Current Loop placed in a Magnetic field. (179)

Unit-4 (Electromagnetic Induction and Alternating Current)

2Marks:

1. Define Magnetic Flux. (196)
2. Define Electromagnetic Induction. (198)
3. State Faraday's law (i) First law (ii) Second law. (200)
4. State Lenz's law. (202)

5. Define Eddy current (or) Foucault current. (208)

6. State Fleming Right Hand rule. (204)

7. Define Self Inductance. (212)

8. Define Coefficient of Self Induction. (212)

9. Define One Henry for Self Inductance. (212)

10. Define Mutual Induction. (215)

11. Define Coefficient of Mutual Induction. (216)

12. Define Unit of Mutual Induction. (216)

13. Define ElectroMotive Force (EMF). (218)

14. Define Methods of producing Induced EMF. (218)

15. Define Poly- Phase Generators. (227)

16. Define Step- Up Transformer. (228)

17. Define Step- Down Transformer. (228)

18. Define RMS value. (235)

19. Define Resonant Frequency. (245)

20. Define Quality Factor (or) Q- Factor. (247)

21. Define Wattles Current. (249)

3Marks:

1. Explain Motional EMF from Lorentz force. (206)

2. Explain Conservation of Energy by Lenz's law. (204)

3. Explain Self Inductance of a long Solenoid. (213)

4. Explain Energy Stored in an Inductor. (214)

5. Explain Mutual Induction. (219)

6. Explain AC generator. (223)

7. Explain Advantages of Stationary Armature – Rotating field Alternator. (224)

8. Explain Three- Phase AC Generator. (227)
9. Explain Advantages of Three- Phase Alternator. (227)
10. Explain Energy Losses in a Transformer. (229)
11. Explain RMS value of AC. (235)
12. Explain AC Circuit containing Pure Resistor. (238)
13. Explain Quality Factor (or) Q- Factor. (247)

5Marks:

1. Explain Application of Eddy Current. (209)
2. Explain Mutual Inductance Between Two Long Co- Axial Solenoids.(216)
3. Explain Production of Induced EMF by Changing Relative Orientation the Coil with the Magnetic field. (221)
4. Explain Single- Phase AC Generator. (224)
5. Explain Construction & Working of Transformer. (228)
6. Explain AC Circuit containing only a Inductor. (239)
7. Explain AC Circuit containing only a Capacitor. (241)
8. Explain AC Circuit containing a Resistor,an Inductor, and a Capacitor in Series (Series RLC circuit). (244)
9. Explain Power in AC Circuits. (248)
10. Explain Advantages & Disadvantages of ac Over DC. (250)
11. Explain Conservation of Energy in LC Oscillations. (253)

Unit – 5 (Electromagnetic waves)

2Marks :

1. Write Displacement Current. (269)
2. Define Electromagnetic Waves. (272)
3. Define Fraunhofer Lines. (279)

4. Define Spectrum. (278)

5. Dispersion of Light. (278)

3Marks :

1. Explain the Following Waves:. (275)

(i) Radio Waves (ii) Microwaves (iii) Infrared Radiation

2. explain the Following Waves:. (276)

(i) Visible Light (ii) Ultraviolet Radiation

(iii) X - rays (iv) Gamma rays

3. Explain Absorption Spectra. (279)

4. Explain Emission Spectra. (278)

5Marks :

1. Explain Maxwell Equation in Integral form. (270)

2. Write properties of Electromagnetic Waves. (272)

3. Explain Absorption and Emission Spectra. (278), (279)

***** ALL THE BEST *****

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