

QUESTION BANK

XII English

UNDERSTANDING PHYSICS


Collection
of 1750
Questions




For solutions contact

 raghusharma@hotmail.co.in

 raghusharma@live.in

 9636188844

 9636188844, 9982288844

Raghu Sharma

Lect. PHYSICS Govt. Sr. Sen. School

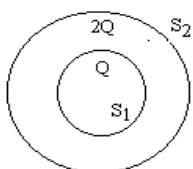
XII English

Chapter 1,2 Electrostatics

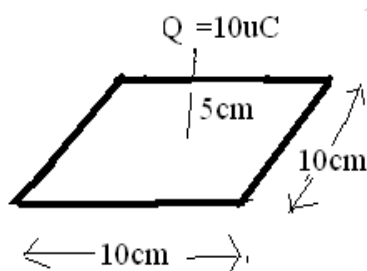
1. Define the electric charge
2. Write name the field which is present around the stationary charge
3. Write down two properties of electric charge
4. Define the positive charge.
5. What is definition of the negative charge?
6. Write down fundamental properties of electric charge
7. Define one coulomb of electric charge.
8. What is magnitude of element recharge in nature?
9. What is the least value of electric charge?
10. Write SI unit of electric charge.
11. What is quantization of electric charge?
12. What are the methods of the charging of an object?
13. Which type of object cannot be charged by the charging by friction?
14. Which type of material cannot be charged by charging by induction?
15. Write the formula of induced charge in charging by induction.
16. Write down basic properties of electric charge.
17. What is electroscope? What is the application of electroscope?
18. Write down formula the induced charge
19. Does magnitude of electric charge present an object depends on its speed or not?
Explain.
20. What is definition of electric permittivity?
21. Define conductors and insulators.
22. What do you mean by frictional electricity?
23. If a glass rod is rubbed with a Silk cloth what is the nature of the charges on them after the friction?
24. When a glass rod is rubbed with a silk cloth, charges appear on both. A similar phenomenon is observed with many other pairs of bodies. Explain how this observation is consistent with the law of conservation of charge.
25. Electric charge is conserved physical quantity explain with example.
26. Electric charges is conservative in nature what do you mean by it?
27. What is electric field?
28. What is importance of intensity of electric field?
29. Define the electric permittivity. What is its value for vacuum?

30. What is unit of electric permittivity?
31. What is value of electric permittivity for the conductors?
32. Why quantization of electric charge is ignored on macroscopic level?
33. State Coulomb's law in electrostatics.
34. What are the properties of the Coulomb's law?
35. What are the limitations of the Coulomb's law?
36. Write down Coulomb's law in vector form.
37. Is Coulomb's law is universal?
38. What is nature of force between two similar charges?
39. Two point charges q_1 and q_2 are placed in air close to each other. What is the nature of force when $q_1q_2 < 0$.
40. What will be the effect on force when a dielectric medium is introduced between the charges?
41. Similar charges repel each other can they attract each other also?
42. How does the presence of dielectric medium, in between the two charges, affect the electrostatic force between them?
43. Can a neutral object be attracted by charged object if yes give an example.
44. What is electric field? Write down expression of intensity of electric field due to a point charge.
45. Explain the significance of the expression: $E = \lim_{q \rightarrow 0} \left(\frac{F}{q} \right)$.
46. What is direction of electric force acting on electron in electric field?
47. Write down name of the digital quantity having you unit Newton per coulomb is it vector or scalar?
48. What is the formula of the force acting on a charge in electric field?
49. What is nature of the symmetry of electric field due to a point charge?
50. How the mass of a body affected by charging?
51. What is only reason of charging of an object?
52. Electric charge follow algebraic addition that means charge is..... Physical quantity.
53. What is direction of electric field at a point?
54. What is principle of superposition for the electric field?
55. What is definition of electric field lines?
56. What do electric field lines represents?
57. Which charge acts as sink for electric field lines?
58. Why two field lines never intersect with each other?
59. Construct electric field lines representing uniform electric field.
60. What is angle between electric field lines and the conductor surface?

61. Why there can be sudden break in the electric field lines?
62. Why electric field lines do not make closed loop?
63. Define electric dipole.
64. Define electric dipole moment is it vector or scalar? Write its unit.
65. If algebraic sum of two charges is zero what does it mean?
66. What is direction of electric dipole moment?
67. What is the force acting on electric dipole in uniform electric field?
68. What is direction of intensity of electric field at axial point of electric dipole?
69. What is direction of intensity of electric field at equatorial point of an electric dipole?
70. Write down the formula of the torque acting on electric dipole in uniform electric field.
71. An electric dipole, when held at 30° with respect to a uniform electric field of 10^4 N/C , experiences a torque of $9 \times 10^{-26} \text{ Nm}$. Calculate the dipole moment of the dipole.
72. What is value of intensity of electric field at Axis and its axis and equatorial line of electric dipole?
73. What is ratio of intensity of electric field at Axis and equatorial line?
74. What is electric flux? Is it vector or scalar? Write unit of the electric flux.
75. On what factors electric flux depends?
76. What is relation between intensity of electric field and electric flux?
77. If electric flux through a close surface is zero what does it mean?
78. If electric flux through a close surface is negative then which type of charge is present inside it?
79. State Gauss law for electrostatics.
80. What definition of Gaussian surface.
81. Write down one property of Gaussian surface.
82. Electric dipole is enclosed by a Gaussian surface what will be the flux through the Gaussian surface?
83. What are limitations of the Gauss law?
84. An electric flux of $-6 \times 10^3 \text{ Nm}^2/\text{C}$ passes normally through a spherical Gaussian surface of radius 10 cm, due to a point charge placed at the centre.
 - a. What is the charge enclosed by the Gaussian surface?
 - b. If the radius of the Gaussian surface is doubled, how much flux would pass through the surface?
85. S_1 and S_2 are two hollow concentric sphere enclosing charges Q and $2Q$ respectively as shown in fig. What is the ratio of electric flux through S_1 & S_2 ?

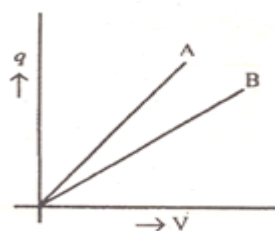


1. A point charge of $+10\mu\text{C}$ is at a distance 5cm directly above the centre of a square of side 10cm as shown in the figure. What is the magnitude of electric flux through the square?

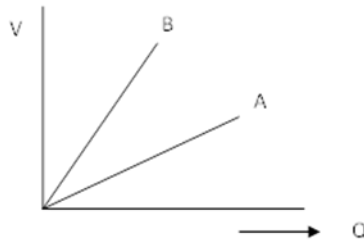


86. How many electrons present in one coulomb electric charge?
87. Write down formula of intensity of electric field due to a linearly charged conductor wire with directions.
88. What is electric field at a point due to charged sheet?
89. Does electric field due to a charge sheet depends on the distance?
90. What is charge density? What are types of charge density?
91. Write down a unit of the
- surface charge density
 - linear charge density
 - volume charge density
92. What is value of electric field inside a charged conducting shell?
93. What is definition of electrostatic potential energy?
94. Define electric potential at a point.
95. Write down relation between electric potential and electrostatic potential energy.
96. Write-down relationship between intensity of electric field and electric potential
97. Electric potential is vector or scalar?
98. Which physical quantity has unit of Joule per coulomb?
99. Electrostatic potential energy between two charges is negative what will be the nature of interaction force between them?
100. What is unit of potential gradient?
101. What is electron volt? How it is related to jule?
102. Write down formula of the electrostatic potential energy of system of electric charges.

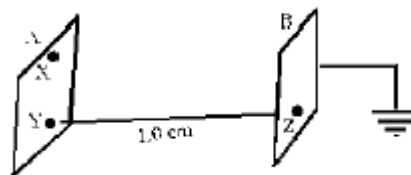
103. What is formula of the electrostatic potential energy of electric dipole in uniform electric field?
104. What is value of electrostatic potential energy of electric dipole in its stable and unstable orientation?
105. What is definition of equipotential surface?
106. What is value of work done to displace charge from one point to another an equipotential surface?
107. Why two equipotential surfaces never intersect with each other?
108. What is the shape of equipotential surface due to a isolated point charge?
109. Construct equipotential surface of uniform electric field?
110. Can electrostatic potential at a point maybe 0 where electric field is not zero?
111. In the direction of electric field potential decreases or increases?
112. What is the value of the electric potential due to electric dipole?
113. Write down electrostatic properties of a conductor
114. What is value of excess electrostatics charge inside a conductor?
115. What is the value of angle between electric field lines and surface of charged conductor?
116. Electric potential at surface of charged conductor is 10 volt what is its value inside it?
117. What are the types of the dielectric molecules?
118. Write down three names of the polar and nonpolar dielectrics molecules.
119. What is SI Unit of electric polarizability?
120. Why dielectric strength of vacuum is infinity?
121. Define capacitance.
122. On what factors capacitance of a capacitor depends?
123. Name the physical quantity whose S.I. unit is :(a) Coulomb/Volt (b) Volt/meter.
124. The given graph shows the variation of charge q versus potential difference V for two capacitors. The two capacitors C_1 and C_2 have same plate separation but the plate area of C_2 is double than that of C_1 . Which of the lines in the graph correspond to C_1 and C_2 and why?



125. The given graph shows that the variation of charge versus potential difference V for the two capacitors A & B. The two capacitors have same plate separation but the plate area of B is doubled than that of A. Which of the line in the graph corresponds to A & B and why?



126. Intensity of electric field between the plates of parallel plate capacitor
127. Write down the formula of the capacity of parallel plate capacitor?
128. How capacity of a capacitor can be increased?
129. In which form energy of a capacitor is Stored?
130. Find the electric field b/w 2 metal plates 5mm apart, connected by a 12V battery.
131. Two identical plane metallic surfaces A and B are kept parallel to each other in air separated by a distance of 1.0 cm as shown Surface A is given a positive potential of 10V and the outer surface of B is earthed. (I) what is the magnitude and direction of the uniform electric field between points Y and Z? (ii) What is the work done in moving a charge of 20 C from point X to point Y?



132. A parallel plate capacitor with air between the plates has a capacitance of 8pf. The separation between the plates is now reduced by half and the space between them is filled with a medium of dielectric constant 5. Calculate the value of capacitance in the second case.
133. A capacitor have capacitance 18 puff , what would happen on the charge and potential if in the capacitor a 3 mm thick mica sheet (of dielectric constant = 6) were inserted between the plates , (I) while the voltage supply remains connected (ii) after the supply was disconnected?
134. Write down the formula of the Stored energy of a capacitor in various form.
135. What is energy density what is its value for the charge capacitor?
136. Name the physical quantity whose unit is C/V?
137. What is value of capacitance of the earth?
138. Give the name of the capacitor whose capacity is infinite.

139. Which physical quantity has unit Farad/meter?
140. What do you mean by dielectric polarization?
141. What is value of capacitance of a conductor if 1 coulomb charge is present on capacitor and potential is 1 volt?
142. Why Van De Graff generator is enclosed in steel tank?
- 143.
144. Give the name of Balanced used by the columns to measure the force between two charges?
145. Electrostatic force between two charges is called a central force why?
146. What is the change in the electric force between two charges if third charge is near to them?
147. A charged particle is free to move in electric field will it always move along the electric field lines?
148. Dielectric constant of water is 80 what is its value of permittivity?
149. What is value of permittivity of Medium having dielectric constant one?
150. In which orientation a dielectric Udaipur Palace in uniform electric field is in stable configuration?
151. For any charge distribution equipotential surface is perpendicular to the electric field lines why?
152. Define electric susceptibility how it is related with the dielectric constant of material?
153. How many protons are present in 1 coulomb is electric charge?
154. What is angle between electric dipole moment and intensity of electric field at axial point of electric dipole?
155. What is the order of the electric potential generated by the Van De Graff generator?
156. If Force of interaction between two charges is repulsive then what will be the product of them (hint:- positive or negative)
157. Where the energy of capacitor does resides?
158. Why the electric field inside a dielectric does decreases when it is placed in external electric field?
159. Do electrons tend to go to reason of low or high potential?
160. Electric field inside a conductor is zero explain it.
161. Write two applications of a capacitor.
162. Can electric potential at any point in space zero but intensity of electric field that is not zero?
163. Write an important property of electric charge.

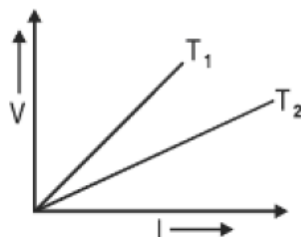
164. In a certain Medium office space electric potential is found to be constant. What is the electric field intensity in that region?
165. What are dimensions of energy density?
166. What is the value of net charge present on the capacitor in charged condition?
167. What is nature of electric charge present for ebonite rod if it is rubbed with cat's fur?
168. An electric dipole is placed in uniform electric field in which position it will experiences maximum torque?
169. Name the physical quantity whose SI unit is N/C?
170. What is relevance of large value of dielectric constant of water?
171. Write down expression of intensity of electric field due to electric dipole at axial and equatorial point?
172. Write down the expression of the capacitance of a capacitor filled with dielectric material?
173. Why capacity of a parallel plate capacitor increases in presence of dielectric slab between the plates?
174. Write down formula of equivalent capacity of capacitors connected in parallel and series combination?
175. When 2 capacitors C_1 and C_2 are connected in series the net is 1.2 farad, when connected in parallel the net capacitance is 5 farad. Find C_1 and C_2 .
176. An electric dipole is placed parallel to the electric field lines what is the work done in rotating it by 60 degree?
177. On which property of electric charge Gold Leaf Electroscope is based on?
178. Can a charged object attract a neutral object?
179. If the radius of the Gaussian surface is the doubled then what will be the effect on the electric flux?
180. What is the effect on the following on inserting a dielectric slab in parallel plate capacitor
- Capacitance of capacitor
 - Charge
181. Do electric field lines for electric dipole make closed loop?
182. What is value of work done by moving a charge on 5 cent five cent and equipotential surface
183. Electric dipole of electric dipole moment 20×10^{-6} Cm is placed in closed surface what is the net flux coming out from the surface?
184. How the Coulomb force between two point charges does depends upon the dielectric constant of the medium?
185. What is equipotential surface of an electric dipole?

186. If a charge is placed at the centre of the cube What is the value of the flux coming out from the one surface?
187. Why the potential inside a hollow spherical charged conductor is constant?
188. What is expression of the electric potential due to a point charge at a distance of "r".
189. How we can charge a metal object positively without touching it?
190. Capacitor of capacitance 12pF is connected to a 50V battery how much electrostatic energy is stored in the capacitor?
191. What is direction of intensity of electric field at equatorial point due to an electric dipole and what is the value of potential at any point on this line?
192. Special type of rubber which is slightly conducting is used to manufacture the tyre of the aircraft why?
193. Calculate electrostatic force of interaction between protons and electrons separated by a distance of 1 nm?
194. Write expression of the intensity of electric field around a point charge.
195. What is the value of electric flux through a surface of due to a charge present outside it?
196. Surface encloses an electric dipole what can you say about the net electric flux?
197. If the electric force has $1/r^3$ dependency. Will Gauss law still valid?
198. What is value of 1 electron volt in joule?
199. Draw a labelled diagram of parallel plate capacitor.
200. What is the principle of the capacity?
201. What is the angle between electric field lines between parallel plate capacitor?
202. What is the intensity of electric field between the plates of parallel plate capacitor in presence of dielectric medium?
203. Electric field is conservative field what is meaning of this statement?
204. Which type of materials cannot be charged by induction?
205. We cannot charge conductor materials by the friction why?
206. Electric charge is quantized physical quantity? Why principle of quantisation is ignored at macroscopic level?
207. What is the value of electric field at the surface of a charged conductor?
208. What is the value excess charge inside a charged conductor?
209. What is work done required to orient a dipole from unstable to stable configuration?
210. What is condition of maximum stability of electric dipole in uniform electric field?

211. What is value of induced electric field inside a polar dielectric medium in absence of external electric field
212. What is value of force acting on electric dipole in uniform electric field?

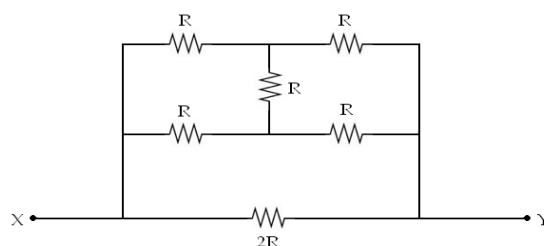
Chapter: 3 Current Electricity

213. What do you mean by current?
214. What is unit of electric current and its dimension?
215. Write down formula of electric current passing through a conductor wire?
216. What is the source of the direct current?
217. What is source of alternating current?
218. Construct current time graph for direct current and alternating current.
219. Define current density what is its SI unit?
220. What is definition of electric resistance?
221. On what factors resistance of a conductor wire depends?
222. Write down the dependence of resistance on the physical parameter like length and cross section area conductor wire.
223. How the resistance of a conductor wire depends on temperature?
224. Write down relation between resistance of a conductor wire and temperature.
225. What is the nature of temperature resistance Coefficient for conducting materials?
226. What is nature of temperature resistance Coefficient for semiconductor materials
227. Name any one material having a small value of temperature coefficient of resistance. Write one use of this material.
228. V-I graph for a metallic wire at two different temperatures T_1 and T_2 is as shown in the figure. Which of the two temperatures is higher and why?

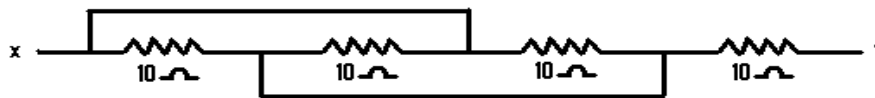


229. Resistance of a conductor at 0 K temperatures will be.....
230. State Ohm's law in macroscopic form.

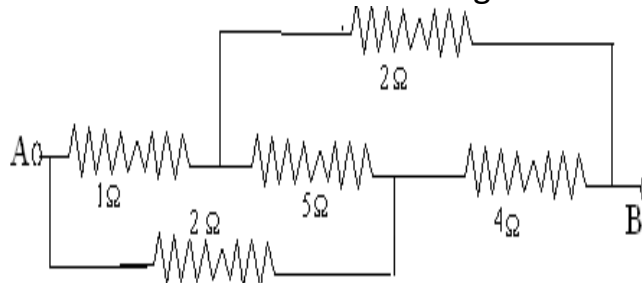
231. State Ohm's law in the microscopic form.
232. Define conductivity and resistivity.
233. On what factors resistivity of a conductor wire depends?
234. If length of conductor wire becomes double then what will be new resistance and resistivity?
235. What is unit of
- Conductance
 - Conductivity
 - resistivity
 - resistance
236. Which are responsible for the conduction of electric current in conductor wire
237. Define drift velocity. What is order of drift velocity?
238. What is direction of drift velocity of electrons in a conductor wire while conducting current?
239. Write down an expression of drift velocity of free electrons in a conductor.
240. How drift velocity of electron according to temperature?
241. Define relaxation time. What is effect of temperature on relaxation time?
242. How does the drift velocity of electrons in a metallic conductor vary with increase of temperature?
243. Define mobility. What is its unit?
244. Write down dimensional formula of drift velocity and mobility.
245. Write down the limitations of the Ohm's law.
246. If we plot a curve between potential difference and current for a conductor wire it will be.....
247. Which materials have negative value of temperature resistance coefficient?
248. Which colour represents highest tolerance value?
249. Define temperature resistance Coefficient what is its unit?
250. Write the relation between Resistivity and relaxation time.
251. Find the equivalent resistance between terminals X and Y of network shown in figure.



252. Four resistors of resistance each of 10Ω is connected as given below.



253. Calculate the equivalent resistance of the following circuit.



254. What do you mean by electrical energy?

255. What is formula of electric power?

256. What is definition of electric cell?

257. Define electromotive force for a cell.

258. What is difference between terminal voltage and electromotive force?

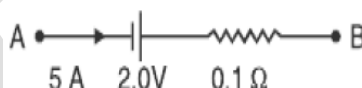
259. Write down relation between terminal voltage and electromotive force for a cell if cell is

a. charging

b. discharging

260. What is value of internal resistance for ideal cell?

261. A battery of emf 2.0 volts and internal resistance 0.1 ohm is charged with a current of 5.0A. What is the potential difference b/w terminal of cell?



262. Write down formula of equivalent electromotive force 2 Primary cells connected in series.

263. Write down formula of equivalent electromotive force 2 primary cells connected in parallel.

264. What is the value of Maximum current which can be drawn from a cell?

265. What is the definition of Wheatstone bridge?

266. What is the condition for the balanced condition of Wheatstone Bridge?

267. What is value of current passing through galvanometer in balanced condition of Wheatstone Bridge

268. What is meter bridge? On which principle it depends?

269. Give the name of materials are used to making wires of metre bridge and Potentiometer.
270. Write relationship between balancing length and unknown resistance for metre Bridge.
271. Why we find zero deflection In Meter bridge?
272. Why potentiometer is preferred over the voltmeter for the voltage measurement
273. What is potential gradient and its unit?
274. Which are the superconductor material?
275. Why there is conduction of the electrons in the absence of electric field?
276. Define mean free path of electrons in conductor.
277. Write down Mathematical form of Ohm's Law microscopic form.
278. Draw the curve between potential difference and current for ohmic and non ohmic devices
279. Why metals are good conductor?
280. Write down colour code of the carbon resistance having resistance $23\text{k}\Omega$
281. State the conditions for which resistance of a conductor wire becomes equal to its resistivity.
282. What do you mean by the tolerance in the colour coding of resistance?
283. Give one example of superconductor.
284. Write down definitions of ohmic and non ohmic devices.
285. Which materials are used to make resistance coil
286. How does the electrical conductivity of a semiconductor vary with temperature?
287. What do you mean by internal resistance of a cell?
288. Why manganin is used to making standard resistance?
289. Define superconductivity. When it occurs?
290. how do you connect a cell to get
- a. maximum and
291. minimum current
292. The storage battery of a car has an e.m.f. of 12 V. If the internal resistance of the battery is $0.4\ \Omega$, what is the maximum current that can be drawn from the battery?
293. In a balanced Wheatstone bridge position of the Galvanometer and cells are inter changed will the net deflection will be balanced?
294. If in balanced condition of Wheatstone Bridge Galvanometer is replaced by another resistance what is potential difference across this resistance?

295. Define nod point in an electric circuit
296. At what point of a closed circuit conservation of charge is valid?
297. What is unit of conductivity?
298. Can we apply Kirchhoff's law of Voltage for alternating and direct circuits?
299. What is average velocity of free electrons in the room temperature in absence of external electric field?
300. When do electric charge move through a conductor?
301. If 1 Amp a current is passing through a conductor wire then how many electrons flowing per second through the conductor wire
302. What is the relation between current velocity and current
303. What is cause of resistance in a conductor wire
304. What is purpose of connecting a battery in electric circuit?
305. What is order of drift velocity of electrons in conductor wire? Why it is very small?
306. A conductor wire is cut into half pieces what will be its new resistance and resistivity?
307. Why copper is most suitable material of connecting wires in an electric circuit?
308. When does the resistance of a conductor becomes almost zero and why?
309. The light from an electric bulb get deal for instant geyser is switched on why?
310. The drift velocity is in the order of a few mm/s but when we switch on a bulb it glows instantly how it is possible?
311. What is value of resistance of a closed and open circuits?
312. When current flows through a heater coil it glows but supplying wire does not why?
313. What are the conditions of the validity of Ohm's Law?
314. Define potentiometer
315. What is principle of Potentiometer
316. What is potential gradient how it is related to sensitivity of Potentiometer?
317. Name the device used for measuring the internal resistance of a secondary cell?
- 318.
319. Make circuit diagram of potentiometer for comparison of electromotive forces of two primary cells.
320. Make circuit diagram of potentiometer for the determination of internal resistance of a primary cell.
321. How we can increase sensitivity of a Potentiometer?
322. What is relation between drift velocity and current?

323. How do the drift velocity of free electrons vary according to the temperature of conductor wire?
324. Write down formula of equivalent resistance of two resistances connected in series and parallel
325. On what factors internal resistance of a cell

Chapter: 4 Moving charge and magnetism

326. What are the sources of the magnetic field?
327. Write down a unit of intensity of magnetic field?
328. What are the methods of representing magnetic fields in plane of paper for board?
329. Explain dot and cross representation for the magnetic field.
330. Write down the formula of the force acting on a moving charge in magnetic field.
331. What is the value of magnetic force on a static charge?
332. If a charged particle is moving parallel to the magnetic field lines what will be the force acting on the charge by the magnetic field?
333. What will be the force acting on the moving charge entering perpendicular to the magnetic field lines in the magnetic field?
334. Under what condition electrons moving through a magnetic field experiences maximum magnetic force?
335. What will be the force on a charged particle in the magnetic field when it enters in magnetic and perpendicularly?
336. When a charged particle enters in magnetic field making angle 60° what will be its path due to magnetic field?
337. What type of the field are produced by the moving charges?
338. What is the Lorentz Force?
339. Write down the expression of the
- radius of path
 - time period in the
 - frequency of the charged particle in the magnetic

340. Does the time period of charged particle depends on its radius of path moving in magnetic field?
341. Write down the formula of the frequency of a moving charge in magnetic field. On what factors it depends?
342. Write down the formula of the kinetic energy of a charged particle in magnetic field.
343. Write an expression of magnetic force acting on a current carrying wire in magnetic field?
344. What is the Lorentz force? write down its formula in vector form.
345. What is the definition of the cross fields.
346. Write down the conditions so that a charged particle moves undeflected while moving in crossed field.
347. Write down name of a device which accelerates the particle.
348. What is the principle of cyclotron?
349. What is the role of the electric and magnetic field in the Cyclotron?
350. What is the cyclotron frequency?
351. Why cyclotron cannot accelerate electrons?
352. Does the cyclotron frequency depend on the radius of the charged particle in Dees?
353. Write down formula of angular frequency of a charged particle in cyclotron.
354. What is value of maximum kinetic energy of a charged particle accelerated by cyclotron.
355. Write down name of the particle accelerator which are used to accelerate electrons.
356. State of Biot-Savart law.
357. What does Biot-Savart law indicates?
358. On what factors magnetic field of a current carrying wire depend?
359. What is the current element?
360. What is similarity between Coulomb's law and Biot-Savart law?
361. What is difference between Coulomb's law and Biot-Savart law?
362. Define permeability of free space. What is its value and unit for free space?
363. Write down formula of intensity of magnetic field at the axis of current carrying circular loop.
364. Write the expression of intensity of magnetic field at the centre of the current carrying circular loop.
365. What is the direction of intensity of magnetic field at the axis of current carrying circular loop?

366. What is magnetic dipole moment of a current carrying coil? Write its formula and unit.
367. What is the value of net force acting on a current carrying loop in uniform magnetic field.
368. Write the expression of the torque acting on a current carrying coil in uniform magnetic field.
369. In which condition torque acting on a current carrying coil in uniform magnetic field is maximum?
370. A current carrying coil is placed in uniform magnetic field it experiences torque perpendicular to.....
371. Does the torque acting on a current carrying coil depends on its shape ?
372. Write the formula of magnetic moment of a revolving electron?
373. What is angle between angular momentum and magnetic moment of a revolving electron?
374. What is Bohr magneton? what is its unit?
375. What is the minimum value of magnetic moment of a revolving electron?
376. Is magnetic moment of a revolving electron is quantized?
377. What is gyromagnetic ratio? What is its unit?
378. Which physical quantity has the same unit as gyromagnetic ratio?
379. If two wires kept parallel to each other carrying current in same direction will they experience force due to each other?
380. Write the nature of the force acting on two parallel current carrying wires carrying current in same direction?
381. If two parallel current carrying wires are getting current in opposite direction what will be the nature of force between them?
382. Define one ampere in SI unit system
383. State Amperes Circuital law.
384. Write down intensity of magnetic field due to a current carrying straight conductor wire at a point near to it.
385. What is a solenoid?
386. Write an expression of magnetic field inside a solenoid near its centre
387. Why magnetic field outside a solenoid is considered zero?
388. Construct the magnetic field lines inside a solenoid.
389. What is the value of intensity of magnetic field at the corners of the solenoid?
390. What is a toroid?
391. What is the value of intensity of magnetic field outside the Toroid?
392. Define turns density for a solenoid what is its unit?

393. Which device is used to measure current? How it is connected in circuit?
394. What is value of resistance of an ideal ammeter?
395. Why resistance of ammeter should be low?
396. Name the device which is used to measure potential difference.
397. How voltmeter is connected in a circuit?
398. What is value of resistance of an ideal voltmeter?
399. Why should a voltmeter have high resistance
400. What is the galvanometer?
401. What is the range of the resistance of galvanometer?
402. How we can say that galvanometer is very sensitive device?
403. What is full scale deflection of current?
404. How can a galvanometer be converted into an ammeter?
405. How can Galvanometer be converted into a voltmeter?
406. What is a Shunt?
407. What is value of shunt required for conversion of galvanometer into ammeter?
408. What is the value of high resistance required for conversion of galvanometer into a voltmeter?
409. What is the principle of moving coil galvanometer?
410. What is the nature of the magnetic field in moving coil galvanometer?
411. What is the role of radial magnetic field in a moving galvanometer?
412. Define current sensitivity. Write down its expression for galvanometer.
413. On what factors current sensitivity of galvanometer depend?
414. What is voltage sensitivity? Write its expression for galvanometer?
415. On what factors voltage sensitivity of a galvanometer depends?
416. Why voltage sensitivity of galvanometer does not depend on the number of turns?
417. How deflection in pointer related to current in a moving coil galvanometer?
418. Which type of shapes of magnets is used to provide radial magnetic field in moving coil galvanometer?
419. Give the advantages of the presence of soft iron core in moving coil galvanometer?
420. Why should spring wire in a moving coil galvanometer have low torsional coefficient?
421. If you could see that a charge is moving away from you then what will be the direction of the magnetic field produced by that charge
422. What should be the orientation of a magnetic dipole in a uniform magnetic field so that its potential energy is maximum?

423. Define 1 Tesla.
424. A Voltmeter, an ammeter and a resistance are connected in series with a battery. There is some deflection in voltmeter but the deflection of ammeter is zero. Explain why?
425. Earth's Magnetic Field does not affect working of moving Coil Galvanometer. Why?
- 426.
427. No force is experienced by a stationary charge placed in magnetic field why?
428. An Alpha particle and neutrons inserted perpendicularly in a uniform magnetic field with same velocity what will be the path followed by each particle?

Chapter: 5 Magnetism & Matter

429. Define the word world magnet.
430. If a magnet is suspended freely what will we observe?
431. Write down the name of the ore of the iron which has magnetic property.
432. What will be the nature of the force acting between same type of magnetic poles?
433. How does the magnetic strength of a magnet vary with the temperature?
434. Define magnetic field lines.
435. Write down two properties of the magnetic field lines.
436. Why do magnetic field lines never intersect with each other?
437. What does magnetic field line represent?
438. What is the direction of the magnetic field lines inside a magnet?
439. Why do magnetic field lines make closed loops always?
440. What is the basic difference between magnetic field lines and electric field lines?
441. Construct magnetic field lines of a bar magnet.
442. Define the term pole strength.
443. Write down the Coulomb's law for their magnetostatics?
444. What is the definition of the permeability of a medium?
445. What is the value of permeability of vacuum?
446. What is a magnetic dipole?
447. What is the reason for the magnetic property of a material?
448. Why can't the poles of a bar magnet be separated?
449. Why is there no existence of magnetic monopoles?
450. What is the intensity of magnetic field at the axial line of a bar magnet?

451. What is intensity of magnetic field at the equatorial line of a bar magnet?
452. What is the ratio of the intensity of magnetic field at axial and equatorial lines of a bar magnet?
453. What is value of potential energy of a bar magnet in uniform magnetic field?
454. What is the value of force acting on a bar magnet in uniform magnetic field?
455. Write an expression of torque acting on a bar magnet in a uniform magnetic field.
456. What are the stable and unstable orientations of bar magnet in uniform magnetic field?
457. In what sense solenoid is equal into a bar magnet?
458. What will be the change in the value of pole strength of a bar magnet if it is cut into two pieces along the perpendicular to its axis?
459. What will be the change in the value of pole strength of a bar magnet if it is cut into two pieces along its axis?
460. How we can decrease the strength of a bar magnet
461. What happens if a bar magnet is cut into two pieces?
462. Why magnetic flux is always zero through a closed surface?
463. Do the magnetic field lines also represent the line of force on a moving charged particle at every point?
464. Point at which magnetic field is zero is known as.....
465. Write down formula of magnetic energy and energy density of a solenoid.
466. What is the direction of magnetic field lines inside and outside a magnet?
467. What is the orientation of the magnetic field lines inside a solenoid?
468. state the Gauss law for magnetism.
469. What is the difference between Gauss law of electrostatics and Gauss law for magnetism?
470. If there is existence of magnetic monopole what will be the new form of the law for magnetism
471. If current is set up in a long copper pipe is there is magnetic field inside and outside the 55
472. What is cause of the magnetic property of the earth?
473. Define dynamo effect.
474. Where is the magnetic pole situated in a bar magnet?
475. Differentiate between north pole and South Pole of a magnet.
476. Define magnetic meridian.
477. Define angle of inclination.
478. Define angle of declination.

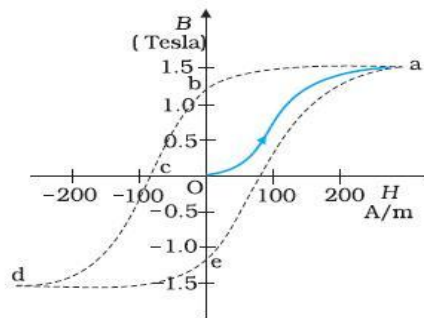
479. Horizontal component of Earth's magnetic field at a place is three times of the vertical component what is the value of angle of dip?
480. If the ratio of the horizontal component of Earth's magnetic field to the resultant magnetic field at a place is $\frac{1}{2}$ what is the angle of dip and dip Place
481. What is the maximum value of angle of dip and where it is
482. What is the value of angle of inclination at the poles of the earth
483. What is the value of angle of inclination at the equator at earth surface?
484. What is the change in the value of angle of inclination when one moves from equator to poles of the earth
485. Write down the horizontal and vertical components of the Earth's magnetic field in terms of the angle of inclination.
486. Define South Pole and North pole of earth magnetic field
487. Does Alternating current shows magnetic effect?
488. If a magnetic dipole kept in uniform magnetic field in stable orientation is slightly disturbed which type of motion will be performed by the dipole
489. If at a certain Place angle of dip is 90° suggest that location for the surface
490. What is the magnetic moment? What is its unit?
491. Write down two properties of a bar magnet.
492. What is magnetization write its unit.
493. What is relative magnetic permeability?
494. Define magnetic susceptibility. How it is related to magnetic permeability of Medium?
495. What are the types of the materials on the basis of the magnetic property?
496. What is the diamagnetic materials? Give an example.
497. What is the cause of the diamagnetic behaviour of a material?
498. What is the value of the magnetic permeability of a diamagnetic material
499. State Meissner effect.
500. What will happen if a diamagnetic material is placed in uniform external magnetic field.
501. How does the magnetic susceptibility of diamagnetic material depends on the temperature?
502. Make a curve between magnetic susceptibility of diamagnetic material and the temperature.
503. What is the nature of the magnetic susceptibility for a diamagnetic material.
504. What are the paramagnetic materials? Give the example.
505. What is the value of the magnetic susceptibility of paramagnetic material?

506. How does the magnetic susceptibility of paramagnetic material varies with the temperature?
507. What is the behaviour of paramagnetic material if it is placed in external magnetic field?
508. What are the ferromagnetic material?
509. What is the reason of ferromagnetism of a material?
510. What is the value of magnetic permeability of a ferromagnetic material ?
511. For which material is magnetic susceptibility does not depend on temperature?
512. Name two elements having positive susceptibility and other having negative susceptibility.
513. How will a diamagnetic and ferromagnetic material behave when kept in non uniform external magnetic field.
514. Permeability of a magnetic material is 0.998 give name the type of the magnetic material
515. What do you mean by the statement that susceptibility of ferrous is more than copper.
516. Paramagnetic material display greater magnetization as temperature is lowered why?
517. Why is diamagnetic is constant and almost independent of temperature?
518. What type of magnetic behaviour exist in all the substances?
519. Define Curie temperature what is its value for Fe.
520. how does a ferromagnetic material changes its magnetic properties if it is heated beyond its Curie temperature?
521. What time a magnetic material is used in making permanent magnet?
522. How does the intensity of magnetisation of a paramagnetic materials vary with increasing applied to external magnetic field?
523. By defining magnetic susceptibility also write its relation with the magnetic permeability.
524. Which type of Magnetism exists in all substances?
525. What are the types of the ferromagnetic material
526. What is hysteresis curve of ferromagnetic material?
527. Classify ferromagnetic material on the basis of b-h curve
528. What are the types of ferromagnetic materials
529. What are the hard and soft ferromagnetic materials?
530. Which materials are used to make core of Transformers?

531. magnet of dipole moment M is kept in uniform magnetic field what will be the value of force acting on it

532.

533. The graph shows the variation of B with H for a ferromagnetic material. What does each of the following represent in the fig? (i) O_b (ii) O_c . Should the area of the graph be less or more in case of a soft iron and why?



534. Write down the formula of the torque acting on a bar magnet in a uniform external magnetic field

535. What is unit of magnetic flux?

536. What is unit of magnetisation?

537. Write down unit of magnetic permeability of a material

538. Define the magnetic flux. On what factors it depends?

539. Give two advantages of the presence of soft iron in moving coil galvanometer.

540. The pole of a magnet is brought near to a stationary charge what will be the force experienced by the electric charge?

541. Write on the properties of the material used for the making permanent magnet.

542. Define term coersivity and retentivity.

543. Find the magnetic moment of a wire of length and carrying current I and bent into form of a circle.

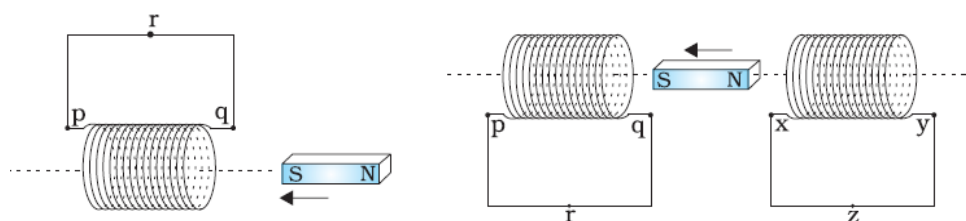
Chapter: 6 Electromagnetic Induction

544. Who proved that the electricity and magnetic are interrelated?

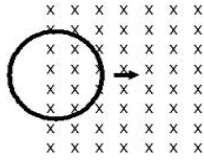
545. Define electromagnetic induction.

546. Where electromagnetic induction is used?

547. What is definition of magnetic flux? what is its unit?
548. What will be the magnetic flux through a plane of surface area a placed in uniform magnetic field B
549. What is S I unit of magnetic flux?
550. Is the magnetic flux a vector physical quantity?
551. On what factors value of magnetic flux depend
552. The magnitude of induced EMF in a circuit is directly proportional to....
553. Define EMF what is its unit?
554. State Faraday's law of electromagnetic induction.
555. Status lenz law of electromagnetic induction.
556. Lenz law is based on the principle of conservation of.....
557. Write the equation of induced EMF in a circuit?
558. In the above fig what will be the direction of induced current
559. Right on relation between induced current and rate of flux change.
560. Writedown relation between charge passed through coil and flux change
561. What are the methods of changing of magnetic flux of a coil magnet system?
562. How we can change magnetic flux of a coil?
563. In which case is magnetic flux decreases with respect to time and what will be the direction of current in different cases?
564. A closed square loop placed parallel to the constant magnetic field between the poles of two magnets towards north pole to South Pole is the current induced in the loop?
565. In which case induced EMF is constant?
566. Define the motional electromotive force.
567. How we can produce induced EMF
568. Write the expression of motional EMF
569. Write down expressions of thermal and mechanical power in case of motional EMF.
570. Predict the direction of induced current in the situations described by the following Figs.



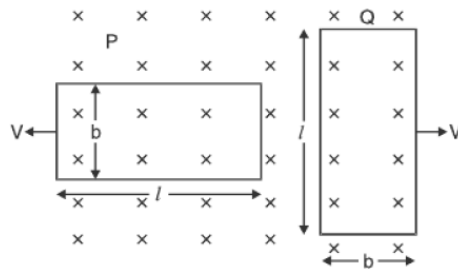
- 571.
572. A conducting loop is pulled in and taken out with a constant velocity in a region of constant (steady) magnetic field of induction B as shown in the figure.



When will the current in the loop flow in (a) Clockwise direction (b) become zero.

573. What are the Eddy Currents?

574. In the figure shown coils P and Q are identical and moving apart with the same velocity V . Induced current in coils are



575. Write down two applications of Eddy Currents.
576. On which factors magnetic moments of the induced current depends?
577. Why Eddy current is undesirable in Transformers?
578. How Eddy Currents are minimised in the Transformers?
579. How Eddy Currents are used in trains as magnetic braking?
580. Explain the role of Eddy currents in electromagnetic damping?
581. How Eddy Currents are used in the induction furnace?
582. What is the flux leakage?
583. Define the inductor. What is definition of the inductance? Write its unit.
584. On what factors inductance of a coil depend?
585. Write an expression of inductance of a coil.
586. If number of turns in coil is doubled then what will be the new value of inductance of the coil?
587. Define phenomenon of self-induction.
588. Write down relation between induced EMF and rate of change in current in inductor
589. Magnetic flux of inductor is directly proportional to.....
590. Write-down expression of energy stored in an inductor.
591. In which form energy is stored in an inductor?
592. Write an expression of energy density for an inductor.
593. Why self-induced EMF is always opposite to the change in the current
594. What is mutual induction?
595. Write down the minimum number of coils required for the phenomenon of mutual Induction?

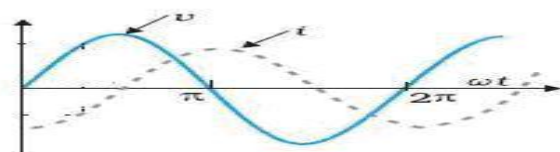
596. Write down expression of self-inductance of solenoid.
597. Self induced EMF is also known as back EMF?
598. Find the energy required to set the current I in an inductor
599. Express the equation for the magnetic energy stored in a solenoid in terms of the intensity of magnetic field B area A length of the solenoid l
600. Construct a diagram showing the minimum flux leakage between two coils.
601. What is the alternating current generator?
602. What is the principle of alternating current generator?
603. What is the average value of alternating current for complete cycle
604. Alternating current generator convertsenergy intoenergy
605. Make a curve showing the change in of EMF and magnetic flux of coil with respect to time
606. In an AC generator when magnetic flux is maximum what will be the value of induced EMF at that instant?
607. Define alternating current
608. Buy the electric power of 500 MW how many bulbs 100 W can be lightened?
609. In most generator which is held stationary?
610. Self induction Coefficient is the ratio of the.....
611. What is expression of induced EMF in a rod of length l moving in velocity v in uniform magnetic field B
612. What is the value of induced EMF for mutual and self induction?
613. Write down the coefficient of mutual induction for two coaxial coils of same length.
614. What is the value of induced EMF produced in alternating current generator?
615. What will be the equivalent inductance of coil connected in the series combination?
616. What will be the equivalent inductance of coil is connected in the parallel combination?
617. Coils of inductance L_1 and L_2 are coupled together then what will be the value of mutual inductance
618. How much energy is stored in a coil of inductance L
619. How would we detect the presence of magnetic field on an unknown planet?
620. Which factors govern the magnitude of induced EMF in a coil?
621. Does the change in magnetic flux induces electromotive force or induced current?
622. A vertical metallic rod falls down in a plane of magnetic meridian will any electromotive force will be induced between it ends?

623. When is the magnetic flux linked with a coil held in magnetic field is 0
624. The induced EMF is sometimes called back EMF why?
625. Why are the oscillations of a copper plate in a magnetic field highly damped?
626. A glass rod of length L move with velocity v in uniform magnetic field B what is the EMF induced in the rod?
627. Why does a metallic piece become very hot when it is surrounded by a coil carrying high frequency alternating current?
628. Name the physical quantity which is measured in Weber or Tm^2
629. When current in a coil changes with respect to time how the back EMF induced in the coil related to it
630. Two inductors L_1 and L_2 sufficient distance apart are connected in series and in parallel write down their equivalent inductance
631. What is 1 Henry
632. Are Eddy Currents useful or harmful

Chapter: 7 Alternating Current

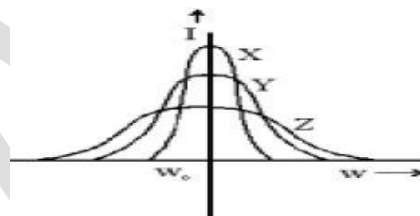
633. Which current do not change direction with respect to time?
634. What is source of alternating current?
635. What is source of direct current?
636. What is average value of alternating current for complete cycle?
637. What is average value of alternating current for positive and negative half cycle?
638. What is simplest equation of alternating current?
639. Write down relation between RMS value and peak value?
640. What is pictorial symbol used to represent alternating voltage source?
641. Which current is not used for electrolysis and why?
642. Which value is known as effective value of the alternating current?
643. Why direction of alternating current changes with respect to time?
644. Define time period of alternating current.
645. What do you mean by instantaneous value of alternating current?
646. Which value of current do we measure from an alternating ammeter?
647. What is Inductive and capacitive reactance?
648. Define impedance what is unit of this?

649. What is definition of admittance? Write down its unit.
650. Draw graph between capacitive reactance and frequency of alternating voltage source.
651. dog draw graph between Inductive reactance and frequency of alternating voltage source.
652. What is effect of frequency on Inductive and capacitive reactance?
653. Constructor phasor diagram for inductor capacitor and resistor.
654. Which have more inductive reactance between air cooled solenoid and iron called solenoid?
655. What is value of capacitive reactance for direct current?
656. What is inductive reactance for direct current?
657. When capacitor behaves as a conductor?
658. When capacitor behaves as a insulator?
659. In which circuit current leads electromotive force by an angle $\pi/2$
660. In which circuit voltage leads current by phase difference $\pi/2$
661. What is the value of potential difference across the capacitor
662. When there is relative motion between a coil and magnet than the current is known as.....
663. What is phase difference between voltage and current for a resistor?
664. What is phase difference between voltage and current in capacitor?
665. What is phase difference between voltage and current in inductor?
666. The fig. shows the variation of v and i vs ωt for a circuit element connected to A.C mains. Name the. Circuit



667. Rotating vectors are the vectors or scalar physical quantity
668. Define power factor. What is its unit?
669. What is value of power factor
- Inductor
 - Resistor
 - capacitor
670. What is value of power factor for LCR series circuit at resonance
671. What is the value of current passing through a capacitor whencapacitor is fully charged

672. For which circuit of a phase difference between voltage and current is negative?
673. For which circuit phase between voltage and current is positive?
674. If the potential difference across inductor and capacitor is equal for LCR series circuit what is value of phase difference between voltage and current?
675. What is value of power factor at resonance condition
676. What is average power supplied to an inductor and capacitor over complete cycle of alternating current?
677. Define condition of resonance for LCR series circuit.
678. What is resonance frequency? Write down its formula and unit.
679. Does resonance frequency depends on the resistance connected in the circuit
680. Make a phasor diagram between voltage and current for
- Inductor
 - Capacitor
 - resistor
681. What is rotating vector diagram
682. The above graph shows the variation of current amplitude vs angular frequency (ω) for a series LCR a.c. circuit obtained for different values of resistances X,Y,Z . Arrange the resistances in increasing order.



683. Write down formula of average power for an alternating current circuit
684. What is definition of Wattless current
685. In a series LCR circuit the voltage across inductor, a capacitor and a resistor are 30 V, 30 V and 60 V respectively. What is the phase difference between applied voltage and current in the circuit?
686. Define Transformer.
687. On which principle of transformer is based on?
688. What are the types of transformer?
689. How many coils present in transformer name them
690. Why Transformer cannot change value of direct voltage?
691. What is value of power loss in ideal transformer?
692. What is the work of step up and step down transformer?

693. Why coils of transformer are bounded on each other?
694. Why thick copper wires are used in the Transformer?
695. Why laminated plates are used in the Transformer for making its cores?
696. Why soft iron is used for making a transformer?
697. Write down the reasons of energy loss in a transformer.
698. Make a labelled diagram showing that power is transferred by using a step up and step down transformer.
699. Write down relation between input and output voltage with the number of turns in the coils of a transformer
700. Write the symbol of the transformer used in the electrical circuit
701. What is the natural frequency of a circuit?
702. When LCR series circuit is known as selective circuit?
703. Define resonance curve. What is resonance curve?
704. What are the half power points in resonance curve?
705. Write the value of the amplitude of current at the half power points in resonance curve.
706. What is definition of the bandwidth?
707. Define quality factor. What does it represent? What is the unit of quality factor?
708. How is quality factor related to the resistance used in the LCR series circuit?
709. Write down formula of bandwidth in terms of R, C, L
710. On which principle does the metal detector work?
711. What is a tank circuit? Why is an inductor and capacitor connected in the tank circuit?
712. What is the value of energy stored in a tank circuit?
713. Why is energy stored in a tank circuit does not change with respect to time?
714. Make a labelled diagram of a tank circuit.
715. What is unit and dimension of power factor?
716. Draw graph to show the variation of capacitive reactance with the frequency of the alternating voltage source.
717. What is the minimum value of the power factor when it is obtained?
718. Why is sparking produced in a switch when it is switched on?
719. A solenoid with an iron core and bulbs are connected to a direct voltage source. How does the brightness of bulb change when iron core is removed from the solenoid?
720. When the voltage and current in LCR series circuit are in same phase?
721. Can we use transformers to change value of direct current?
722. What is the value of frequency for the direct current source?

723. When does LCR series circuit minimum impedance?

724. Make impedance diagram

Chapter: 8 Electromagnetic Radiations

725. Why capacitor blocks of direct current?

726. What is definition of displacement current?

727. Displacement current is equal to conduction current is it true or false?

728. Does displacement current obey KCL

729. Show that displacement current is equal to conduction current

730. Write an expression of displacement current

731. Is charging current of a capacitor is 26 Amp what will be value conduction current?

732. What are the Maxwell equations?

733. Write down mathematical expression of Amperes Maxwell law.

734. Define electromagnetic radiation.

735. What is basic source of electromagnetic radiation?

736. write a labelled diagram of plane polarised electromagnetic radiation propagating in the X direction

737. An electromagnetic radiation is propagating in x direction then what will be the directions of electric field and magnetic field?

738. Write down the nature of the electromagnetic radiation.

739. What is latest in electromagnetic radiation

740. Write down an equation of electromagnetic radiation propagating in Y directions for electric and magnetic field.

741. What is the net charge present on the electromagnetic radiation?

742. Why electromagnetic radiation are neutral in nature?

743. Can we deflect electromagnetic radiation in presence of electrical magnetic field is nowhy?

744. What is the phase difference between electric field and magnetic and electromagnetic radiation?

745. Does Medium is required for propagation of electromagnetic radiation?

746. What is the speed of the EMR in a medium?

747. In which medium speed of electromagnetic radiation is maximum?
748. Express value of speed of light in terms of permittivity and permeability of Medium.
749. What is the frequency and wavelength range for electromagnetic radiation.?
750. What is angle between electric field and magnetic field in an electromagnetic radiation
751. Which are perpendicular to each other in an electromagnetic radiation
752. What is the mass of the electromagnetic radiation?
753. Does electromagnetic radiation carry energy?
754. Write down relation between frequency wavelength and energy of electromagnetic radiation
755. Which type of charge is present on electromagnetic radiation?
756. What is value of energy density of electric field and magnetic field in electromagnetic radiation?
757. The frequency of a charged particle 9×10^5 Hz. What will be the frequency of the radiation?
758. Write down a spectrum of the electromagnetic radiation.
759. What is nature of electromagnetic Radiations on basis of vibrations of particles of medium?
760. Write down formula of energy of a Photon.
761. What is the order of pressure applied by the electromagnetic radiation on the surface?
762. Why electromagnetic radiations show property of the polarization?
763. What is the value of momentum change for a radiation if it are absorbed by a surface?
764. Electromagnetic radiation is reflected back from a surface then what will be the change in the moment?
765. What is the source of the gamma radiation?
766. Writing name of the radiation which has highest frequency and energy?
767. Write down two applications of the gamma radiation.
768. What is the source of the X-ray radiation?
769. What is the use of X ray in the medical field?
770. Write down two applications of X Ray
771. Right on the name of the radiation which are used to find out cracks in bones?
772. Give of the name of the radiations are used to find out defects crystal structure?
773. What is frequency range of X-rays?

774. What are the types of the X ray?
775. What is the source of the ultraviolet radiation?
776. Why bulbs of the ultraviolet radiations are made by the quartz but not glass why?
777. Write down two applications of ultraviolet radiation.
778. Which radiations are absorbed by the ozone layer?
779. Which type of radiations is used information of Vitamin D?
780. Which radiations are used for the food formation in the plants?
781. Which radiation are dangerous for skin and eye
782. Which part of electromagnetic radiation is sensitive for human eyes
783. Which field vector is known as light vector
784. Write down spectrum of the visible light
785. What is frequency and wavelength range of the visible light?
786. For which colour Human eye is most sensitive?
787. Write down two applications of the visible radiation.
788. Write down name of the radiations which are produced by the hot objects.
789. Write down two applications of the infrared radiation.
790. Which radiation are known as heat waves
791. Which radiations are used in low distance communication?
792. Which radiations are used for Muscular pain relief?
793. Which types of radiations are used in the Night photography?
794. Which radiations are responsible for the greenhouse effect
795. What is the source of the microwave?
796. Which radiations are produced by the Magnetron?
797. Why microwaves are used in satellite communication?
798. Write down two applications of the microwaves.
799. Radar stands for.....
800. Which part of the electromagnetic radiation is used to detect the speed of cricket ball?
801. Why microwaving can cook food which contain water?
802. What is the source of the radio waves?
803. Write down applications of the radio waves
804. What is the formula of frequency of electromagnetic radiation emitted from a charged capacitor of capacitance and inductance?
805. If there is no atmosphere around earth the average temperature of earth will be more or less of current temperature
806. What is the expression of poynting vector?

807. What does poynting vector represent
808. Which type of the electromagnetic waves detected by the receiver antenna?
809. Write down name of the detection of the microwave?
810. How we can detect the infrared radiation
811. Visible light can be detected by the.....
812. How we can detect visible radiations
813. How X Ray and gamma rays can be detected
814. What is bolometer?
815. What is value of difference of displacement current and conduction current?
816. Does electromagnetic wave mechanical waves?
817. Which waves are used for telecommunication?
818. Which current can easily pass through a capacitor?
819. What is the unit of the displacement current?
820. Why sound requires medium for propagation but light not why?
821. Which layer secures us by the effect of ultraviolet radiation?
822. What is responsible for energy of electromagnetic radiation?
823. Which radiations are used to destroy cancer cells?
824. Which fields are present around and electric charge which is moving with uniform velocity
825. Arrange these radiations in ascending order of the frequency
826. Microwaves
827. Gamma Rays
828. radio waves
829. Write the name of the part of the electromagnetic spectrum having wavelength range 10^{-10} m
830. When light propagates from one medium to another its wavelength change it but frequency not why?
831. How radio waves are produced?
832. Vehicles moving in foggy weather use yellow colour head-lights. Why?
833. Which constituent radiation of the electromagnetic spectrum is used:
- In Radar
 - to photograph internal parts of a human body and
 - For taking photographs of the sky during right and foggy conditions?
834. If the earth did not have an atmosphere, would its average surface temperature be higher or lower than what it is now?
835. Why are microwaves used in Radar?
836. Identify the part of the electromagnetic spectrum which is

- a. suitable for radar systems used in aircraft navigation.
- b. used for studying crystal structure
- c. produces intense heating.
- d. has its wavelength range between 390nm and 700nm.
- e. has largest penetrating power.
- f. used in microwave ovens.

Chapter: 9 Ray Optics

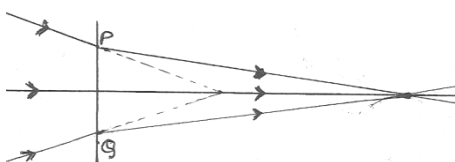
- 837. What is the frequency range of visible light?
- 838. What is wavelength range of visible light?
- 839. Which part of electromagnetic radiation is sensitive for human eye?
- 840. Define the light ray.
- 841. Name of the phenomenon of light which are shown by a light ray?
- 842. Write the name of the device which reflects light?
- 843. What are the types of mirror?
- 844. Make a indicative diagram of plane mirror.
- 845. What are the spherical Mirrors?
- 846. Write down names of the spherical Mirrors?
- 847. Which mirror is also known as the convergent mirror?
- 848. Which mirror is also known as divergent mirror ?
- 849. What is the sign convention for the light ray in Optics?
- 850. Focal length of a concave mirror is.....
- 851. Focal length of a convex mirror is.....
- 852. Focal length of plane mirror is.....
- 853. Which material is used to polish in mirrors
- 854. What is the centre of curvature of a spherical mirror?
- 855. Define radius of curvature of a spherical mirror.
- 856. What is the definition of focus point of mirror?
- 857. What is the definition of focal length of a spherical mirror?
- 858. Write the relation between radius of curvature and focal length for spherical Mirrors.
- 859. What is effect on the focal length of a mirror if mirror is kept in water?
- 860. Define principal axis. Write down name of the points which are present on the principal axis of the spherical mirror.
- 861. At which point on mirror principal axis is also a normal?
- 862. Normal at any point on spherical mirror always passes through.....

863. What is paraxial light ray?
864. Define the reflection.
865. Which physical quantities do not change during the phenomena of reflection?
866. What are the types of the reflection?
867. Define regular or specular reflection.
868. Define irregular or diffuse reflection.
869. Write down laws of reflection.
870. What is definition of angle of incidence and angle of reflection how they are related to each other
871. What is the value of angle between incident ray and reflected ray?
872. What are the laws of reflection for spherical Mirrors?
873. What is angle between incident ray and reflected ray if it is passing through the centre of curvature for a spherical mirror?
874. When a concave mirror make virtual images?
875. What are real and virtual images?
876. can you take a photograph of virtual image?
877. When we obtain images of a concave mirror on the screen?
878. Write down mirror equation for a concave and convex mirror.
879. What is the value of magnification factor for a mirror?
880. In which condition magnification factor is negative?
881. In which condition magnification factor is positive?
882. What is the location of image formed by a concave mirror if object is placed at infinity?
883. What is the location of image formed by a concave mirror object is placed at focus point of the mirror?
884. Write down the formula of the magnification factor in terms of object distance and image distance.
885. Define reflection of light.
886. What is the condition cause of refraction?
887. Write down laws of refraction
888. What happens to frequency and wavelength of light when it undergoes refraction?
889. Which physical quantities do not change during the phenomenon of refraction?
890. How does frequency of a beam of ultraviolet light change when it goes from a class.

891. Light of wavelength 6000 \AA enters in medium of refractive index 1.5 from air what will be its frequency after refraction?
892. Name the physical quantities which change during the phenomenon of refraction.
893. Write down Snells law.
894. What is the index of refraction of a Medium? what is its unit?
895. Does Refractive index of medium depends on the wavelength of incident light?
896. In visible light which colour has higher value of refractive index
897. How phenomena of refraction is related to speed of light in that Medium
898. If angle of refraction is greater than angle of incidence which Medium is denser in this condition?
899. What is definition of angle of deviation?
900. How many times reflection of light takes place while reflecting for a Glass slab.
901. Make a diagram of refraction of light propagating through a glass slab
902. What is definition of the lateral shift in case of refraction through the glass slab?
903. On what factors does the lateral shift depend?
904. If value of angle of incidence of glass slab is 30° what is value of emergent angle?
905. Is refractive index of glass with respect to air is 1.33 then what is the value of refractive index of air with respect to glass?
906. Angle of incidence is 90° then what will be the value angle of reflection
907. A light ray is propagating from denser to rarer medium then what will be the effect on its speed?
908. Write down the conditions for the refraction through spherical surface?
909. Write down mathematical expression of the lens maker's formula.
910. Write down lens equation .
911. For which lens focal length is
- Negative
 - Positive
912. Is light rays passing through the optical centre of the lens what will be the angle of deviation
913. Which lens is also known as converging lens?
914. Define angle of deviation of a Prism?
915. What is the value of prism angle for equilateral prism.
916. Write the formula of the refractive index of material of prism.
917. For which colour the refractive index of prism material is

- a. minimum
- b. maximum

918. Write down the condition in which angle of deviation is minimum for a prism.
919. What is relation between incidence angle and emergent angle for minimum deviation of prism?
920. What is angle between refracted ray and prism surface in minimum deviation condition?
921. Define power of a lens. what is its unit and dimension?
922. For which lens power is
- a. negative
 - b. positive
923. How does the power of a convex lens vary if incident violet light is replaced by the red light?
924. Write formula of equivalent focal length of combination of two thin lenses
925. If one convex and concave lenses of equal focal length are combined then what is the focal length of the combination?
926. What is the total internal reflection of light?
927. What are the conditions of the total internal reflection of light?
928. What is the amount of light which is reflected back into normal of total internal reflection?
929. Define critical angle in case of total internal reflection.
930. What is the relation between critical angle and refractive index of medium in case of total internal reflection?
931. On which principle of light Optical Fibre is based on
932. Write the value of critical angle for a medium of refractive index $\sqrt{3}$
933. For the same angle of incidence the angles of refraction in three media A , B , C are 15° , 25° , and 35° respectively. In which medium the velocity light is minimum.
934. The line PQ in the adjoining ray diagram represents a lens. State, with proper reason, whether the lens is convex or concave.



935. What is definition of a microscope?
936. What are the types of microscope?
937. When is simple convex lens as a simple microscope?

938. What is the nature of image formed by a simple microscope?
939. Write the formula of the magnification factor of simple microscope.
940. Make a labelled diagram of simple microscope.
941. What is a compound microscope?
942. what is nature of image formed by a compound microscope?
943. Write down expression of magnification factor of compound microscope.
944. Two and lenses having magnification factor 3 and 5 are combined with each other what is the net magnification factor of the combination
945. Which lens is bigger in size in objectives and eye piece in a compound microscope?
946. Define the term tube length for compound microscope.
947. Define the angular magnification.
948. Write down formula of angular magnification factor.
949. Which device angularly magnify objects
950. What is the telescope make a labelled diagram of refracting type telescope
951. In a refracting type telescope which lens has higher focal length?
952. What is the expression of magnification factor of a telescope?
953. Why refracting type telescope is not commonly used?
954. What is the formula of the tube length of telescope?
955. Define tube length of a telescope?
956. What is length of a telescope in normal adjustment?
957. Make a labelled diagram of a reflecting type telescope.
958. Why reflecting type telescope is most commonly used?
959. What are the advantages of the reflecting telescope over refracting telescope?
960. How we can explain twinkling of stars?
961. Why sun is visible before the actual sunrise?
962. What change in the focal length of a convex mirror and convex lens occur when the incident violet light is replaced by the red light?
963. Blue colour is seen at the bottom of the spectrum when white light is dispersed by prism why?
964. Name the light sensitive cell present in retina of eye?
965. What is blind spot?
966. What is the range of normal vision?
967. When does Snells law of refraction fail?
968. What is the position of near point for a normal eye?
969. What is the angular range in which a primary Rainbow is seen?
970. Can a lens be used in a medium of which it is made of?

971. What do you mean by normal adjustment of telescope?
972. Why total internal reflection is known as total internal reflection?
973. An object is held at the principal focus of a concave lens of focal length f where the final image will form?
974. What is mean by the linear magnification?
975. A glass prism held in Water how is the angle of minimum deviation affected?
976. A Ray of light falls normally on a mirror what is value of angle of incidence and angle of reflection?
977. A substance has critical angle of 45° for yellow light what is its refractive index
978. Can we obtain image of an object formed by a convex mirror on screen or not?
979. For which wavelength of light eye is most sensitive?
980. What is minimum size of a plane mirror which can enable a man to see his full image?
981. A lens has power of $-2.5D$ what is focal length and nature of lens?
982. A mirror and lens are held in water what change do we expect in the focal length of either?
983. Can you photograph the image formed by a convex mirror?
984. Which Mirrors are used as side view mirror in motor plane?
985. Which mirror is also used for shaving?
986. What type of mirror would you prefer for observing traffic at your back and why?
987. And diverging lens of focal length f is cut into 2 identical Parts for making Plano concave lens what is the focal length of each part?
988. The lens of class is immersed in water what would be the effect on power of lens?
989. What should be position of an object related to biconvex lens so that it behaves like a magnifying lens?
990. Why does white light disperse when it passes through a glass prism?
991. If the wavelength of light incident on a convex lens is increased how is the focal length change?
992. Does Critical Angle depend on the colour of light?
993. Why does the sun appear red at sunrise and sunset?
994. Why astigmatism occurs?
995. How can astigmatism be corrected?
996. How can presbyopia be corrected?
997. What is myopic eye?
998. What is hypermetropia? How it is corrupted?

999. Why is distance of distinct vision increases with increase in age?
1000. What is meaning by near point and far point
1001. Why secondary Rainbow is is fainter than primary rainbow?
1002. What are the reasons of sparkling of diamonds?
1003. When light travels from rarer to denser medium the speed decreases. Is this decrease in speed implying that decrease in energy?
1004. How will the position and intensity of image be affected if the lower half of the mirror reflecting surface painted black?
1005. Why we do not see our image by an irregular reflecting object?
1006. Objective of telescope construct large diameter and large aperture why?
1007. Why objective of microscope is of a small aperture?
1008. What is role of iris?
1009. Name three steps involved in the formation of primary rainbow?
1010. What is a Spherical aberration?
1011. Explain image formation by the combination of two thin lenses in contact?
1012. What is the nature of the image formed on the retina of the eye?
1013. Which cells of the retina are responsible for black and white vision?
1014. An optician advices and old man to use lenses of power + 3.5 D what did the old man is suffering from?
1015. Eyeglass lens of refractive index 1.5 is placed in through of liquid what must be the refractive index of the liquid in order to make the lens disappear?
1016. In which device microscope and telescope the difference in the focal length of two lenses is larger?
1017. which nerve connect to the n
1018. What is shape of light sensitive cells of our retina which corresponds to colours?
1019. Which colour is deviated most and least on passing through a prism?
1020. Two thin lenses of power + 4D and - 2D are kept in contact what is the focal length of the combination?
1021. When does a Ray passing through a Prism deviate away from its base?
1022. A person moving with a velocity V towards a plane mirror with what velocity the image move towards him?
1023. A mirror is turned through 10° degree by what angle will the reflected ray turn?
1024. Where should object be placed so that concave mirror make real inverted and magnified image?

1025. One wants to see an enlarged image of an object in a mirror which type of mirror one should use?
1026. Which spherical mirror has a real focus and virtual focus
1027. Define refractive index in terms of velocity and wavelength of light in Medium.
1028. What is the main use of The Optical Fibre.
1029. Which has greater value of critical angle Diamond for Water?

Chapter: 10 Wave Optics

1030. Which three phenomena established wave nature of light?
1031. Define the terms wave front.
1032. What is phase difference between two particles of Medium on the same wave front?
1033. Define a Ray of light.
1034. What is angle between a wave front and light ray?
1035. How the direction of a Ray is related to the wave front?
1036. What is the geometrical shape of a wavefront of light diverging from a point light source?
1037. What is the shape of a wavefront emitted by a light source in front of the narrow slit?
1038. Which physical quantity is increasing in size with for constituting a converging or diverging beam?
1039. What will be the effect of the radius of the spherical wavefront of light which is converging to a point?
1040. What is the shape of a wavelength of light emerging out a convex lens when a point light source is placed at its focus?
1041. What will be the shape of a wavefront of light coming from a point source kept at infinity?
1042. Which principle is used to find the position of a wavefront after some time interval?
1043. What are the secondary wavefronts
1044. State Huygens principle?
1045. What is the geometrical shape of a wavefront when a plane wave passes through a convex lens?
1046. What will be effect on plane wavefront if it passes through a prism?

1047. What will be the shape and nature of a front when it passes through a concave lens?

1048. What is Doppler effect in the light?

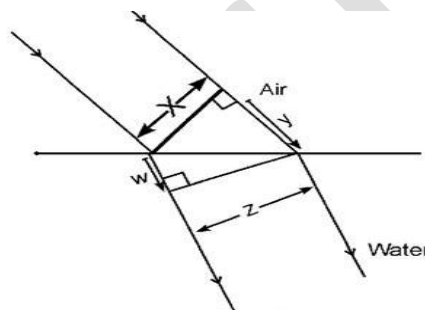
1049. Why Doppler effect occurs in the light?

1050. What is the blue shift?

1051. What is the redshift?

1052. Write the relation between frequency difference and wavelength difference due to the Doppler effect

1053. A plane wave front of width X is incident on air –water interface and the corresponding refracted wave front has a width Z as shown. Express the refractive index of air with respect to water, in terms of the dimension shown.



1054. What are the coherent sources of light

1055. What are methods to obtain current sources of light?

1056. Why coherent sources are essential to obtain sustained interference pattern?

1057. State the conditions which must be satisfied by light sources to be coherent.

1058. What is relation between path difference and phase difference?

1059. Write down the condition for the constructive and destructive interference.

1060. Give a relation between path difference and wavelength for a constructive interference between two light waves?

1061. Give relation between path difference and wavelength for destructive interference between two light waves?

1062. What happens to interference fringes if one slit is covered?

1063. What is the shape of the interference fringes in young's double slit experiment?

1064. Does the central fringe is bright or dark in the young's double slit experiment

1065. What is the effect on the interference pattern observed in a Young's double slit experiment in the following cases:

a. Screen is moved away from the plane of the slits.

b. Separation between the slits is increased

- c. Widths of the slits are doubled
- d. Monochromatic Red light is replaced by blue light, Give reasons for your answer.

1066. Can we observed phenomena of interference on the screen if two slits are separated by the distance less than wavelength of light waves?
1067. what is the ratio of the frindge width for the bright and dark frindge in young's double slit experiment
1068. Does phenomenon of interference not obey the law of conservation of energy?
1069. The interference phenomena of light establish that light has nature
1070. What will be the effect on the interference fringes in young's double slit experiment if one slit is covered?
1071. What is diffraction of light?
1072. What is condition for the diffraction?
1073. What should be the appropriate conditions to observe diffraction
1074. What is condition for the first minima in the case of a diffraction due to the single slit?
1075. What is fennel distance?
1076. Phenomena of polarization is shown by light waves but not sound waves why?
1077. What do you mean by polarization of light?
1078. What is plane polarised light?
1079. Electromagnetic waves can be polarised why?
1080. Is the blue light from the sky polarized or not?
1081. Which among x-rays sound waves can be polarized?
1082. State the Malus law?
1083. Explain polarization of light waves by reflection
1084. What is Brewster angle or polarising angle?
1085. The following are the observations regarding an unknown beam "X". What does each signify?
- a. "X" shows interference and diffraction .
 - b. It travels in vacuum with the speed of $3 \times 10^8 \text{ m/s}$
 - c. It does not get deflected on passing through an electric field
 - d. After passing through a nicol prism, the intensity is reduced.
- 1086.
1087. what is relation between Brewster angle and refractive index of medium?
1088. What is a Polerizer?
1089. Give two examples of commonly used polaroid
1090. If two polaroid one polarizer and analyser oriented that is no light is transmitted what is the angle between axis of polarizer and analyser

1091. What is angle between the plane of polarizer and analyser in order that intensity of transmitted light decrease to half
1092. Difference between a ray and wavefront.
1093. What type of wavefront will emerge from a point light source?
1094. Unpolarised light of intensity I is passed through a polaroid what is the intensity of the transmitted light?
1095. What percentage of intensity of light is transmitted if angle between polarizer and analyser is 30°
1096. When light is polarised by the reflection what is the direction of vibration of electric field vector of the polarized light
1097. Why we two images of an object when seen through a Nicol prism
1098. Draw sketch showing that incident reflected and transmitted rays when light is incident at a polarizing angle on a glass slab
1099. How does the angular separation of interference fringes in young's double slit experiment change when the distance of separation between two slits and screen is the doubled
1100. How does the fringe width changed in the Michelson's apparatus of young's experiment is kept in a liquid of refractive index 1.3
1101. State one feature by which is the phenomenon of interference can be distinguished from their diffraction
1102. Unpolarized light is incident on a surface of glass of refractive index n and that angle of incidence in the reflected light gets totally polarized write the relation between angle and refractive index of medium
1103. Sketch the shape of wavefront emerging from a point source of light and also mark the centre
1104. Small piece of stone is dropped into a pond of still water what is the shape of the wavefront
1105. Sketch the reflected ray front emerging from a convex lens and plane wavefront is incident normally on it
1106. What is the effect on the interference fringes in a young's double slit experiment every screen is moved away from the plane of the slits
1107. How much is the distance in the terms of fringes between central maximum and first minimum
1108. What is the ratio of the path difference in every turn of the light wave from the central maximum to first minimum

1109. In young's double slit experiment to light ways arriving at a point P have a phase difference of $\frac{5\pi}{3}$ what is the intensity at this point expressed as a fraction of the maximum intensity a note
1110. Thin films such as a layer of oil on water so beautiful colours when illuminated by white light name the phenomenon involve
1111. Different sources images of every 2λ and $2A$ them eat at a point equidistant from the sources in the intensity of the first $\sin \pi$ what is resultant intensity at that point
1112. Is light from a sodium plane plane polarised
1113. Can you recognise with the next ice whether the given light is polarized or not
1114. A Ray of light is incident on a Medium at the polarizing angle what is the angle between reflected and refracted Ray
1115. What is polarising angle of a Medium in which angle of refraction is 33°
1116. What is value of refractive index of a medium of polarizing angle 60°
1117. Is the resolving limit of a telescope is made 14 then how much will be there with volume power
1118. Define resolving power of a microscope and write its formula
1119. What is resolution limit
1120. What will be effect on the resolving power of a microscope by decreasing the wavelength of incident radiation
1121. Write the formula which shows the relationship between fresnel distance and aperture size
1122. What is the phase difference between two waves denoted by Bible is equal to $\frac{\pi}{2}$ and why it is required to be course $\frac{\pi}{2}$
1123. Aviance excellent is conducted in water in colour software then what would be the effect of changes
1124. In single slit diffraction what is the effects of all the bills of the central Maxima on increasing the slit width
1125. To obtain the observations of roll half adder fraction from single slit what should be the shape of the incident bayfront on the flood
1126. Why is the aperture of objective lens of the telescope made big
1127. Write the formula of the resolving power of a telescope
1128. Write the value of a difference equalent to phase difference in waves
1129. What information is obtained about the nature of the light from phenomenon of polarisation
1130. In which type of diffraction the incident and reflected ray friends are plane

1131. Is the distance between point light source and screen is doubled then what would be it on the intensity of the light on the screen
1132. The relative change in the wavelength of a heavenly body moving away from the Earth is 1 then find out the velocity of the heavenly body
1133. Write the expression showing relation between path difference and phase difference of two days
1134. How many methods of obtaining coherent sources of light name them
1135. How many types of diffraction of light name them
- 1136.
- 1137.
- 1138.
- 1139.

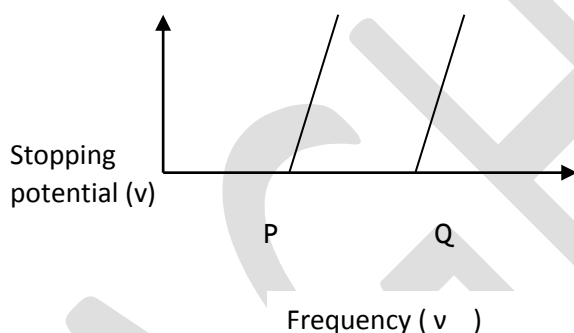
Chapter: 11 Dual Natures

1140. What is definition of the work function? in which unit it is measured?
1141. For which element value of a function is minimum and maximum?
1142. Define threshold frequency how it is related to work function?
1143. Define threshold wavelength how it is related to threshold frequency and work function of material?
1144. What are the methods of the electron emission from a metal surface?
1145. Define thermionic emission. What is the name of the electrons emitted in thermal emission?
1146. What is the field emission? What is the order of electric field required for the electron emission from a metal surface?
1147. Define photo emission.
1148. What are the photo electrons?
1149. What is photoelectric current? Why it is very low?
1150. Define Photoelectric effect.
1151. Make a labelled diagram of experimental arrangement for the photoelectric effect
1152. What are the parameters that we can change during the phenomenon of the photoelectric emission in study of Photoelectric effect?
1153. Why quartz window is used experimental arrangement of Photoelectric effect?
1154. Why we use vacuum glass tube for the study of Photoelectric effect?
1155. What is the effect of the intensity of light on the photoelectric current
1156. Draw a curve between intensity of incident radiation and Photoelectric current.

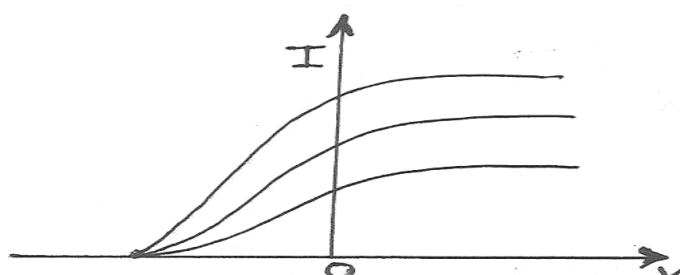
1157. In the experiment of the photoelectric effect zero voltage of collector cup photoelectric current is not zero why
1158. What is the saturation current how it is related to the voltage of the collector cup?
1159. Does saturation current depend on the intensity of incident radiation?
1160. At what voltage of collector cup photoelectric current is zero.
1161. Define stopping potential.
1162. What is the value of photoelectric current at the stopping potential?
1163. Does stopping potential difference on the intensity of incident radiation?
1164. On what factors stopping potential depends?
1165. What is the effect of the frequency of incident radiation on Photoelectric effect?
1166. Write down relation between maximum kinetic energy of electron and stopping potential.
1167. Draw a curve between photoelectric current and potential of collector cup at different intensity of incident radiation?
1168. Make a curve between stopping potential and frequency of incident radiation.
1169. What is the value of slope of curve between stopping potential and frequency of incident radiation?
1170. Write down the experimental features of the photoelectric effect
1171. What is the time delay between radiation incidence and electron emission in case of Photoelectric effect?
1172. Why wave theory of light cannot explain the phenomenon of Photoelectric effect?
1173. What is definition of the photons?
1174. Write down relation between energy of photon and its frequency?
1175. What is value of rest mass of photon?
1176. What is value of charge present on photon?
1177. Give out the name of physical quantity which remains conserved in the introduction of the material with the radiation
1178. Write down Einstein's Photoelectric equation.
1179. Using Einstein's Photoelectric equation relation obtain relation between stopping potential and frequency of incident radiation.
1180. What is photoelectric cell?
1181. What is speed of a Photon?
1182. Which experiments supports the particle nature of the radiation?

1183. Intensity of incident radiation on the metal is doubled what will be the new kinetic energy of emitted photoelectrons?
1184. while increasing the intensity of incident radiation will stopping potential change?
1185. Write down the expression of the wavelength of a photon in the terms of the velocity and frequency.
1186. What is the De Broglie hypothesis?
1187. Write down the expression of the wavelength of the matter wave
1188. In the photo electric experiment, the graph between the stopping potential and frequency of incident radiations on two metal plates P and Q are shown in figure.

- Which has greater work function?
- What does the shape of the line depict?



1189. How does the stopping potential change of a photocell if distance between light source and cathode of cell is doubled?
1190. De Broglie wavelength of any particle is inversely proportional to its.....
1191. An electron and Alpha particle has same de Broglie wavelength how the kinetic energy of these particles are related to each other?
1192. De Broglie wavelength of a proton and neutron are equal which has higher kinetic energy?
1193. In an experiment on photoelectric effect, the following graphs were obtained between the photoelectric current (I) and the anode potential difference (V). Name the characteristic of the incident radiation that was kept constant in this experiment.



1194. State the Heisenberg Uncertainty Principle.
1195. Make diagram of a wave packet of light.
1196. Is photoelectric emission possible at all frequencies why or why not?
1197. How the work function influences the kinetic energy of emitted electronic in experiment of Photoelectric effect?
1198. How does the kinetic energy of emitted photoelectrons and photoelectric current vary with increase in the frequency of incident radiation?
1199. What is cutoff voltage? How it is related to frequency of the incident radiation?
1200. Does cutoff voltage depends on the frequency of incident radiation?
1201. name the phenomenon that in the photoelectric effect which illustrate the particle nature of light.
1202. Define electron volt.
1203. What is value of electron volt in Joule?
1204. Write down any two uses of the photo electric cell.
1205. Give the name of the experiment which shows the wave nature of the particle.
1206. Write down name of the experiment in which electrons diffract.
1207. Give the name of the gases present in the ionization chamber. Why these gases are used in ionisation chamber?
1208. Which material is more photosensitive in Zinc and Copper?
1209. Why photons are not deflected by the electric and magnetic field?
1210. Name of the phenomenon which shows by the radiations in the wave nature
1211. Write relation between threshold frequency and threshold wavelength.
1212. What is value of Planck constant? What is its unit?
1213. In which condition photoelectric current is maximum in the experiment of the photoelectric effect? This maximum value is also known as
1214. Write any two observations in the experiment of the photoelectric effect.
1215. In which conditions photoelectrons are not ejected?
1216. Do all the photons have same as if not why?
1217. Write the relation between energy and momentum of a Photon.
1218. Photon isof light andof energy.
1219. What determine the maximum velocity of a photo electron?
1220. What information is obtained by the division germer experiment
1221. Write down the drawbacks of the wave theory of the light representing of the photoelectric effect.
1222. On what principle electron microscope is based on?
1223. Why macroscopic objects in daily life don't show wave like properties

1224. What is the value of the voltage and angle of diffraction in the in DavissionGermers experiment for maximum diffraction?
1225. What is value of de Broglie wavelength in the DavissionGermers Experiment?
1226. Photo electric eqation is based on the conservation of
1227. Write the name of the element present as the target in the DavissionGermers experiment

Chapter: 12 Atom

1228. When was the first model of atom proposed and by whom?
1229. Who discovered electron?
1230. What is the value of specific charge of electron? what is its unit?
1231. Give the various names of J.J. Thomson model of atom.
1232. Name the negatively charged particles present in the atom.
1233. Make indicatory diagram of Thomson model of atom.
1234. According to J.J.Thomson which charge is continuous in atom
1235. Unit of specific charge is equal to unit of(chapter 4)
1236. Explain J.J.Thomson model of atom.
1237. Why Rutherford performed his famous experiment of Alpha particle scattering?
1238. What is atomic number and atomic mass number of Alpha particle
1239. What are the requirements of Alpha particle scattering experiment?
1240. What are the various name of alpha particle scattering experiment?
1241. Write name of the radioactive element used for continuous emission of Alpha particle in Rutherford alpha scattering experiment?
1242. Why gold foil is used in Alpha particle scattering experiment
1243. Which material coated screen is kept behind the foil in Alpha particle scattering experiment?
1244. What was the thickness of the gold foil?
1245. Why the Alpha particle scattering was performed Invacuum?
1246. What was the observations of the Rutherford from his practical?
1247. Write to conclusions of Rutherford Model of atom.
1248. Write on name of the positively charged Central particle present in the atom.
1249. Define the term nucleus.
1250. Write the formula of repulsive force between alpha particle and nucleus.
1251. When alpha particle reaches close to the nucleus its kinetic energy increases or decreases why?

1252. Find the condition when coulombs law is not applicable on the Alpha particles.
1253. What is the shortest distance of approach?
1254. What will be the closest distance from the nucleus of a positively charged particle accelerated by potential difference V ?
1255. Define the term Impact Parameter. What is unit of Impact Parameter?
1256. How is the angle of scattering related to Impact Parameter?
1257. Why Rutherford gave the statement that "electrons are not stationery"?
1258. Write one drawback of Rutherford Model of atom.
1259. What is the path of the scattered Alpha particles from nucleus of gold?
1260. Explain why Alpha particles are scattered even the net charge on an atom is zero?
1261. What will be the value of Impact Parameter if scatterin angle is zero?
1262. Why stability of it cannot be explained by the Rutherford atomic model?
1263. Why Rutherford Model is also known as planetary model?
1264. What do you mean by line spectra?
1265. Which force is required to perform circular motion?
1266. Why is spectrum of atom should be continuous according to the Rutherford Model of atom
1267. Can we obtain composition of 10 non metals by the help of the spectrum
1268. Name the dark type of spectrum of present on the photographic plate.
1269. Name the dark lines spectrum present in the sunlight.
1270. What happens when is spectral lines are resolved by the spectrometer?
1271. Write down postulates of the Bohr model of hydrogen atom.
1272. Which physical quantity for an electron is quantized according to Bohars postulates?
1273. Write the quantization condition of angular momentum for an electron.
1274. What is value of speed of electron revolving in n th orbit.
1275. How the speed of electron in a orbit depends on Z and n
1276. What is the formula of the radius of n th orbit?
1277. On what factors the radius of orbit depends?
1278. Write definition of Boharradius. What is its value?
1279. What is relation between Kinetic energy and potential energy for a revolving electron?
1280. write down relation between Kinetic energy potential energy and Total energy of an electron revolving around the nucleus.
1281. According to Bohr model of hydrogen atom what is the radius of I orbit of He^{+2} ion in ground state

1282. Write down formula of Total energy of an electron revolving around nucleus.
1283. What does the negative sign in the total energy of electron indicate?
1284. Why potential energy of an electron is negative?
1285. What is value of energy of an electron in first excited state?
1286. In hydrogen atom what is ratio of potential energy and kinetic energy in any Orbit?
1287. What is the minimum value of angular momentum for an electron?
1288. What is quanta of angular momentum for an electron?
1289. What is ratio of velocity of electron in first Orbit to velocity of light?
1290. What do you mean by the ionization energy?
1291. What do you mean by that all the stationary states of electrons are negative States?
1292. Define the term ionisation potential.
1293. What is excitation potential for He⁺ atoms?
1294. Write any two shortcomings of Bohr theory.
1295. Write the ratio of minimum and maximum wavelength in Balmer series of H atom?
1296. Write the name of spectral series of hydrogen atom.
1297. Which is the spectral series of the hydrogen atom is obtained in ultraviolet region of electromagnetic radiation?
1298. Which is the spectral series of hydrogen atom which emits invisible reason of radiation?
1299. Is energy in ground state in hydrogen atom is zero what is energy in first excited state
1300. What is order of size of atom?
1301. Why nucleus is responsible for scattering of Alpha particles at large angle but electrons are not
1302. What is the nature of charge on Alpha particle and what is its value?
1303. How Alpha particle is different from Helium atom?
1304. In what is the weather in line spectrum
1305. What type of energy levels present in atom?
1306. Right on units of Rydberg constant.
1307. What is the value of quantum number for electron in ground state?
1308. What is the absorption spectra lines present in hydrogen atom
1309. What is the value of ionisation energy in hydrogen atom
1310. What is meaning of excited atoms

1311. Is the energy of electron in first Mohabbatein - 27.2 electrons in an atom what is energy in third Orbit
1312. The quantum number for an electron in minimum energy state is an is equal to one what is value of n for energy state
1313. Why most of Alpha particles passed through gold foil without stuttering
1314. In atomic spectrum of atom only discrete spectral lines are obtained by
1315. What is the ratio of radii of first second and third orbit of h atom
1316. In hydrogen atom in order to obtain increased radiation what are the values of principal quantum numbers animal and end to
1317. In which Orbit the angular momentum of an electron of h atom is 3 HR 425
1318. What is the wavelength of last line of Balmer series
1319. Which part of atom was discovered by Rutherford
1320. Write the formula of radius of orbit in boholChori
1321. What do you mean by energy level diagram
1322. Write the formula of distance of closest approach
1323. What is the formula of Impact Parameter
1324. Calculate the value of fine structure constant
1325. What is order of velocity of electron in ground state of hydrogen atom
1326. Can a hydrogen atom observer photos energy exceeds its binding energy
1327. Name the physical quantity whose dimensions are same as a planck constant
1328. What is the energy possessed by an electron and is equal to infinity
1329. What is the ground state energy of electron in case of e c l i 7
1330. What is the order of radius of Helium atom
1331. What is the ratio of radii of orbits corresponding to first excited state and ground state in hydrogen atom
1332. Name the spectral series of hydrogen atom which line in ultraviolet region
1333. Write the expression of Gauhar radius of hydrogen atom
1334. Name the series of hydrogen atom which line in infrared region
1335. Write an Imperial relation for the persons Ridge lines of hydrogen spectrum
1336. What are the values of 1st and 2nd AC citation potential of hydrogen atom
1337. What is the value of Rydberg constant what is its unit
1338. Name the series of hydrogen spectrum which lies in visible region of electromagnetic radiation
1339. The radius of 11 electron orbit of hydrogen spectrum is 5.3 into 10 raise to minus 11 what is the radius of orbit in second excited state
1340. What is the value of Impact Parameter full scattering angle of 180 degree
1341. What is the order of wavelength of spectral lines

1342. Send transition of Electronics place what is the effect on kinetic energy and potential energy of electron
1343. What is the book of quantization condition for the angular momentum of an electron in second Orbit
1344. What is electron volt
1345. In bohar atomic model the radius of first electron orbit of hydrogen atom is 6 metre what is the radius of electron Orbit in second Orbit
1346. what is the value of scattering angle of Alpha particles for which Impact Parameter is zero
1347. Electrons become stationery in inorbit what would happen
1348. Why was the Alpha particle was placed in red brick in Alpha particle scattering experiment
1349. When electron jumps over energy level in which form of energy liberated
1350. What are the drawbacks of the atomic model
1351. What is the stark effect
1352. What is the gym on effect
1353. can we obtain intensity of spectral lines by the way Harshit omics theory
- 1354.
- 1355.
- 1356.

Chapter: 13 Nuclei

1357. Which fundamental particles are present inside in the place of an atom?
1358. What is order of the size of nucleus?
1359. Define atomic mass unit ?
1360. What is value of 1 amu in kg?
1361. What are the nucleons write down name.
1362. What is definition of the isotopes?
1363. Write down name of the isotopes of Hydrogen.
1364. Which isotope of hydrogen is known as heavy hydrogen?
1365. Which isotope of hydrogen is Radioactive?
1366. How many number of neutrons are in deuterium and tritium?
1367. Write down the formula of the atomic mass of an atom having different isotopes.
1368. If atomic number of an element is 10 and atomic mass number 22. What are the number of neutrons present inside the nucleus?

1369. Which element has maximum isotopes?
1370. What is the atomic number and atomic mass number of neutrons?
1371. What is the charge present on a Neutron?
1372. How neutron changes itself into Proton outside the nucleus?
1373. What is the value of half life time of neutron?
1374. Why neutron is suitable for starting a nuclear fission reaction?
1375. What is mass energy relationship formula of Einstein?
1376. What is mass defect?
1377. Define binding energy. What is its unit?
1378. How binding energy is related to mass defect?
1379. What is definition of binding energy per nucleon?
1380. What is the importance of the binding energy per nucleon?
1381. How is stability of a nucleus can be explained by the binding energy per nucleon value?
1382. Which nucleus is most stable? What is its value of binding energy per nucleon?
1383. What is the average value of binding energy per nucleon?
1384. Make a curve between binding energy per nucleon and atomic mass number.
1385. Why nuclear having mass number less than 30 show nuclear fusion reaction?
1386. Why nuclear having mass number more than 170 Nuclear Fission reaction?
1387. What is relation between radius of nucleus and atomic mass number
1388. What is the ratio of the density of two nuclei having mass number A_1 and A_2
1389. What will be the ratio of radii of two nuclei of mass number are A_1 and A_2
1390. The ratio of 2 radii of two different nuclei nuclei is $\frac{1}{2}$. What is the ratio of their mass numbers?
1391. Define nuclear force. Is it fundamental force of nature?
1392. Write down two properties of nuclear force.
1393. What is the order of range of nuclear force?
1394. What is the value of nuclear force acting on electron?
1395. Nuclear forces are saturation type forces. Explain this.
1396. Does nuclear force depend on the nature of the charge present on nucleon?
1397. Does nuclear force has both attractive and repulsive type nature?
1398. Make a curve between nuclear potential energy and separation between two nucleons.
1399. Define term radioactivity. Who discovered it?
1400. What is meaning of activity of an active material? What is its unit?
1401. Define active and daughter nuclear
1402. State has the Rutherford Soddy law of the radioactivity.

1403. According to Rutherford Soddy activity of a material is directly proportional to.....
1404. Why radioactive decay law is also known as exponential decay law?
1405. Write down an expression between active nuclei and time.
1406. Make a Curve between Active nuclei and time
1407. Define decay constant. What is its unit?
1408. Define half life time. how it is related to decay constant?
1409. What is mean lifetime. How it is related to decay constant?
1410. What is relation between half life time and mean lifetime?
1411. What percentage number of nuclei remains undecayed after time interval equal to mean lifetime of a radioactive element?
1412. Write the name of the particles which are emitted during the phenomena of the radioactivity from unstable nuclei?
1413. Write down decay law of Alpha particles.
1414. What is the Q value of reaction
1415. If Q value of a reaction is negative then there will be alpha emission or not?
1416. Write down one example of alpha decay?
1417. What changes occur in atomic number and atomic mass number in an element due to Alpha decay?
1418. What are the values of charge present on the
- Alpha
 - Beta
 - Gamma radiation
1419. What are the types of the beta particles?
1420. Write down the law of Beta – emission.
1421. write down law of Beta + emission from unstable nucleus
1422. Write down an equation showing beta + emission
1423. What is the effect on atomic mass number and atomic number in Beta Plus and beta minus emission
1424. What are the gamma radiations?
1425. What is the value of charge present on the gamma radiation?
1426. Y Kamal mission is followed by the alpha and beta mission
1427. What is atomic number and atomic mass number of Gamma radiation
1428. What is the change in the atomic mass number and atomic number during the emission of the gamma radiations from an unstable nucleus?
1429. When Gamma radiations are emitted from a nucleus?
1430. Give an example of Gamma emission?

1431. What is the nuclear fission reaction?
1432. Why Nuclear Fission reaction is shown by the particles having mass number greater than 170?
1433. What is source of energy in nuclear fission reaction?
1434. Write down one example of nuclear fission reaction.
- 1435.
1436. What are the types of the nuclear fission reaction
1437. Why neutrons are used in nuclear fission reaction
1438. What is a nuclear reactor?
1439. Write down one example of controlled and uncontrolled Nuclear Fission reaction.
1440. Why energy is liberated in nuclear fission reaction?
1441. What is a moderator in nuclear reactor?
1442. What are the examples of the moderator?
1443. What is the function of moderator in nuclear reactor
1444. What are the function of control rod
1445. What is nuclear fusion reaction?
1446. Why Nuclear Fission reaction occur at high temperature and high pressure
1447. Write down one example of nuclear fusion reaction
1448. In which reaction more amount of energy is liberated ?
1449. Write equations of the proton-proton cycle.
1450. What is the atomic mass number and atomic number of ${}_{92}\text{U}^{238}$ after the elimination
1451. What is the atomic number and atomic mass number of an element after B^+ Emission?
1452. What is atomic mass number and atomic number of an element after B^- Emission?
1453. What is change in the atomic mass number and atomic number in Gamma emissions
1454. 50k constant of a radioactive substance in 6.693 per metre what will be its offline X and me like that
1455. Binding energy of oxygen 16 nucleus is 127. 5 mega electron volt what is value of binding energy per nucleon
1456. What is the nature of the nuclear force between two nucleons if potential energy is negative?
1457. Why energy is released in nuclear fission reaction?
1458. Which is the heaviest stable nucleus?

1459. Why only heavy water act as moderator in nuclear reactor not ordinary water?
1460. What is the effect of temperature and pressure on radioactivity?
- 1461.
1462. What are the essential parts of a nuclear reactor
1463. What is nuclear winter
1464. Why cadmium is used as control rod nuclear reactor
1465. Does the ratio of neutron to Proton increases decreases or remain the same in alpha emission?
1466. Which is higher ionization power
- Alpha particle
 - beta particle
 - gamma radiation
1467. Name two elements which are used to control the reaction rate of neutron in nuclear reactor?
1468. If ratio of atomic mass number is $1/5$ then find the ratio of density of two nuclei?
1469. What is a nuclear chain reaction?
1470. Why neutron is considered as ideal particle for nuclear fission reaction?
1471. Calculate half life time of a radioactive element if it remains $1/32$ times of its initial value after 25 days?
1472. What is the ratio of the half life time and mean lifetime?
1473. What is value of density of nucleus?
- 1474.
- 1475.

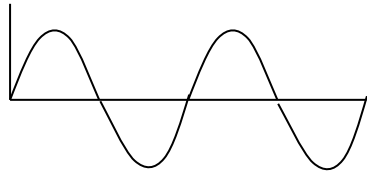
Chapter: 14 Semiconductor and electronic Devices

- 1476.
- 1477.
- 1478.
- 1479.
1480. How many types of materials are present on the basis of electrical conductivity.
1481. What is definition of a conductor?

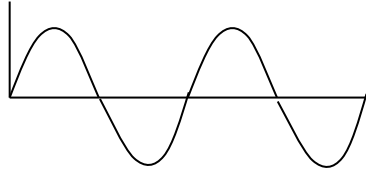
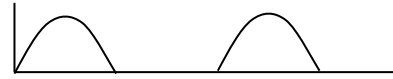
1482. Give the name of the electrical properties on which materials are classified.
1483. What are the semiconductors?
1484. What are the insulators?
1485. Write down two examples of the elemental semiconductor.
1486. Write down two examples of inorganic compound semiconductor.
1487. Write down two examples of organic compound semiconductors.
1488. Write down two examples of organic polymer semiconductor.
1489. what is the range of the conductivity of
- Conductor
 - Semiconductor
 - insulator
1490. What is definition of a hole? What is charge present on a hole?
1491. Why mobility of a hole is very low in comparison to electron?
1492. How to the conductivity of semiconductor vary with the temperature?
1493. What is the effect of continuous the heating of a semiconductor?
1494. write the names of the three substances for which there is decrease in the conductivity for increase the temperature
1495. Write down the nature of the temperature resistance coefficient for
- Couder
 - semicondductor
1496. At absolute zero temperature what is the behaviour of Germanium piece?
1497. Write down the name of the charge carriers in semiconductor.
1498. How many semiconductors present on the basis of the impurity?
1499. What is definition of a band?
1500. What is the definition of the conduction band?
1501. What is definition of valence band?
1502. Differentiate between valence band and conduction band.
1503. Define forbidden energy gap.
1504. What is the value of energy gap between conduction band and valence band for a conductor?
1505. What is value of Forbidden energy gap in Germanium and Silicon
1506. Why Germanium at absolute zero temperature acts as insulator?
1507. Name the charge carriers in the following at room temperature
- Conductor
 - Semiconductor
 - Insulator
1508. How the materials are classified on the basis of forbidden energy gap?

1509. Why Germanium is preferred than Silicon to make semiconductor devices?
1510. How does the forbidden energy gap of an intrinsic semiconductor vary with increase in the temperature?
1511. Make energy level diagram of
- conductor
 - Insulator
 - semiconductor
1512. What are intrinsic semiconductor?
1513. Write down two properties of intrinsic semiconductors?
1514. What are the extrinsic semiconductor?
1515. Why Impurity is mixed in semiconductor?
1516. Write down two properties of extrinsic semiconductor
1517. Which type of semiconductor has more value of mobility?
1518. How does the energy gap in an intrinsic semiconductor vary with a pentavalent impurity
1519. How is a sample of an n-type semiconductor electrical in neutral although it has an excess of negative charge carriers?
1520. What is doping of semiconductor?
1521. How many types of doped semiconductors are present?
1522. Does a semiconductor device obey Ohm's law?
1523. Out of electron and hole which one has higher value of mobility and why?
1524. Name the charge carriers in the following at room temperature
- Conductor
 - Intrinsic
 - semiconductor insulator
1525. What is the ratio of holes and electrons in an intrinsic semiconductor?
1526. What are the types of the extrinsic semiconductors? Write the names.
1527. Which are the majority charge carriers in n-type semiconductor?
1528. Which are the majority charge carriers in p-type semiconductor?
1529. Write the name of the three substances used to make
- n type semiconductor
 - P type semiconductor
1530. Which type of impurity is mixed for formation of N type semiconductor?
1531. Which type of impurity is the next for formation of P type semiconductor?
1532. Define the donor and acceptor impurities.
1533. The energy gap of silicon is 1.14 eV find the maximum wavelength of light it can be absorbed.

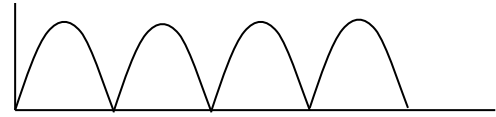
1534. From which group in periodic table Donor and acceptor impurities belong?
1535. Make energy level diagram of n-type and p-type semiconductor?
1536. What is Fermi energy?
1537. Define Fermi energy level.
1538. What is the position of the energy level of impurity atom in
- n type semiconductor
 - P type semiconductor
1539. What is a PN junction?
1540. Write down two applications of PN junction diode.
1541. What is definition of depletion layer.
1542. Which type of charger is not present in depletion layer?
1543. What is effect on Forbidden energy gap of impurities in intrinsic semiconductor
1544. Make a symbol of PN junction diode
1545. How potential barrier is changed in PN junction diode due to the Biasing?
1546. In which biasing a diode acts as a conductor?
1547. In which biasing a diode acts as a insulator
1548. Make circuit diagram of PN junction diode in forward bias and reverse bias.
1549. What is difference between forward biasing and reverse biasing of a junction diode?
1550. How does the thickness of a depletion layer in PN junction diode depends on biasing?
1551. What is the value of thickness of depletion region in a PN junction diode is forward bias?
1552. How depletion layer is formed?
1553. What is cause of current in forward bias?
1554. What is cause of current in Reverse biasing?
1555. What is the difference between forward bias and reverse biasing of a diode?
1556. What is value of resistance of diode in forward and reverse bias?
1557. How we can use a semiconductor diode as a rectifier?
1558. Define rectifier. What are types of rectifier?
1559. What is difference between half wave rectifier and full wave rectifier?
1560. How PN junction diodes are used in half wave and full wave rectifier?
1561. Make labelled circuit diagram of half wave and full wave rectifier.
1562. Draw input and output waveforms of half wave and full wave rectifier.
1563. An a.c signal is fed in to two circuits A and B to get out put wave forms as in figure. Identify the circuits A and B and name the basic component used in both



A



B



1564. Name the device which is used as a voltage regulator.

1565. Draw symbol of the zener diode?

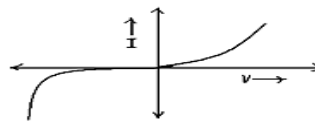
1566. What is a zener diode? As compared to a normal diode are the following higher or lower in the zener diode?

- a. Doping
- b. Depletion width
- c. Potential barrier.

1567. How is a Zener diode fabricated to make it a special purpose diode? Draw I-V characteristics and explain the significance of the the breakdown voltage.

1568. The figure on right side shows the V-I characteristic of a semiconductor device.

- a. Identify the semiconductor device used here.
- b. Draw the circuit diagram to obtain the given characteristics of this diode.
- c. Briefly, explain how this device is used as a voltage regulator.



1569. A photodiode is fabricated from a semiconductor with a band gap of 2.8 eV. Can it detect wavelength of 6000. nm? Justify.

1570. What is light emitting diode?

1571. Write the symbol of LED?

1572. Mention two important advantages of LEDs over conventional lamps.

1573. State the reason, why GaAs is most commonly used in making of a solar cell.

1574. What is a solar cell?

1575. Draw symbol of solar cell.

1576. Can we measure the potential difference of a p-n junction diode by connecting a sensitive voltmeter across its terminals?

1577. What is the direction of diffusion current in a junction diode?

1578. If the forward bias of a PN junction is increased from 0 to 0.05V then no current in the circuit. What is the contact potential of junction diode?
1579. What is the ratio of forward and reverse resistance of PN junction diode?
1580. Why are photo diodes used preferably in Reverse bias condition?
1581. The output of a regulated DC power supply is to be regulated name the device that can be used for this purpose.
1582. Draw i-v characteristics of a solar cell
1583. What are the important criteria for selection of a material for solar cell fabrication
- 1584.
1585. How many terminals of a transistor has name them.
1586. Differentiate between three segments of a transistor on the basis of their sizes and level of doping.
1587. In the working of a transistor emitter base junction is forward biased while collector base junction is Reverse Biased why?
1588. Why is the transistor is called junction transistor
1589. In a junction transistor emitter base junction is always forward biased why?
1590. What are the types of the junction transistor ?
1591. Draw symbol of NPN and PNP transistor.
1592. What is the work of a emitter in transistor?
1593. What is work of a collector in transistor?
1594. Which part of transistor has highest doping ?
1595. Which part of transistor has maximum size?
1596. Which biasing is used for effective operation of the transistor?
1597. What is the main work of the transistors?
1598. What is relation between emitter current base current and collector current?
1599. Which current of transistor has minimum values?
1600. What is current amplification factor?
1601. What is the phase relationship in output and input voltage in a common base transistor amplifier?
1602. What is the phase relationship in output and input voltages in common emitter transistor amplifier?
1603. Define trans conductance of a transistor.
1604. Cantwo PN junction diode kept back to back work as a PNP transistor?
1605. In NPN transistor what are the current careers inside and outside the transistor circuit?

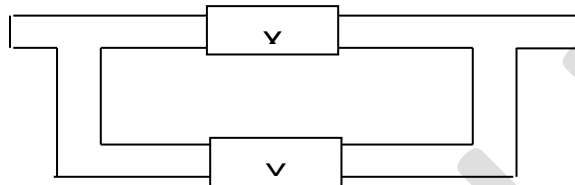
1606. In PNP transistor what are the current Carriers inside and outside the transistor circuit?
1607. Would you prefer to use a transistor as a common base for a common emitter amplifier?
1608. In an NPN transistor circuit the collector current is 10 mA if 90% of the electrons emitted reached the collector find the base current and collector current.
1609. State the relationship for the voltage gain in terms of trans conductance using transistor as an amplifier.
1610. What is the condition for the state of saturation of transistor?
1611. How is a transistor Biased to be in active state.
1612. Three amplifier circuits are connected in series the voltage gain of each is 10 than what is final voltage amplification factor?
1613. Why transistor cannot be used as a rectifier?
- 1614.
1615. Write down formula of current amplification factor for steady and varing current.
- 1616.
1617. Why current amplification factor in common base configuration
1618. What is input characteristics curve of transistor
1619. Which variable is kept constant for making input characteristics curve of transistor?
1620. What is output characteristics curve of transistor?
1621. Which physical quantity is kept constant for floating output characteristics of transistor
1622. What is formula of current gain in common base and common emitter configuration of transistor?
1623. What is meaning of Threshold potential?
1624. What do you mean by an amplifier?
1625. In which state transistor act as switch off?
1626. In which state transistor as a switch on?
1627. In which state transistor acts as an amplifier?
1628. What is phase difference between input and output voltage in common emitter amplifier?
1629. Drive circuit of transistor amplifier?
1630. Define the feedback.

1631. When a transistor is used as an oscillator why is it necessary to feedback energy to LC circuit.

1632. What are the types of the feedback?

1633. In which feedback current and voltage gain is maximum?

1634. The block diagram given below is of a set up that can produce a signal of any desired frequency without any external input signal. Identify the components X and Y of this set up and write the function of each.



1635. What type of feedback is required in an oscillator?

1636. Make a labelled circuit diagram of transistor as a oscillator.

1637. Which configuration is used of transistor in oscillator.

1638. What is a tank circuit

1639. What is the frequency of oscillation of a transistor oscillator?

1640. What are the logic gates?

1641. Write down name of three fundamental Gates.

1642. Which twogates are known as universal Gates?

1643. Make simple diagram of and Gate or gate and not get

1644. What are the number of input terminals in ANDandOR gate?

1645. Write down the mathematical operation of the ANDandOR gate

1646. What is definition of AND Gate?

1647. What is definition of OR gate?

1648. What is definition of NOT get?

1649. Make a truth table of AND gate and OR gate

1650. What is definition of NAND Gate

1651. Write down definitionNOR Gate

1652. Write down truth table of NAND and NOR Gate

1653. Make NOT gate using the combination of AND gate

1654. MakeNOT gate using the combination of the ORgate

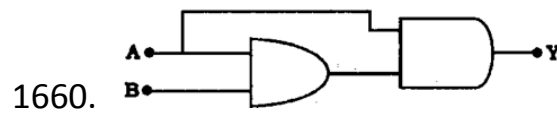
1655. Make AND Gate using the combinations of NOR and NAND Gate

1656. Make OR gate using the combinations of NOR and NAND Gate

1657. In which Gate output is low only and only if all the inputs are low?

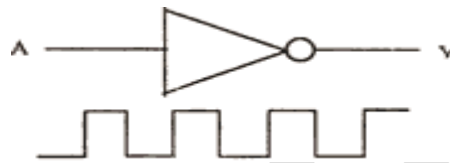
1658. What is integrated circuit

1659. Write the truth table for the following combination of gates :



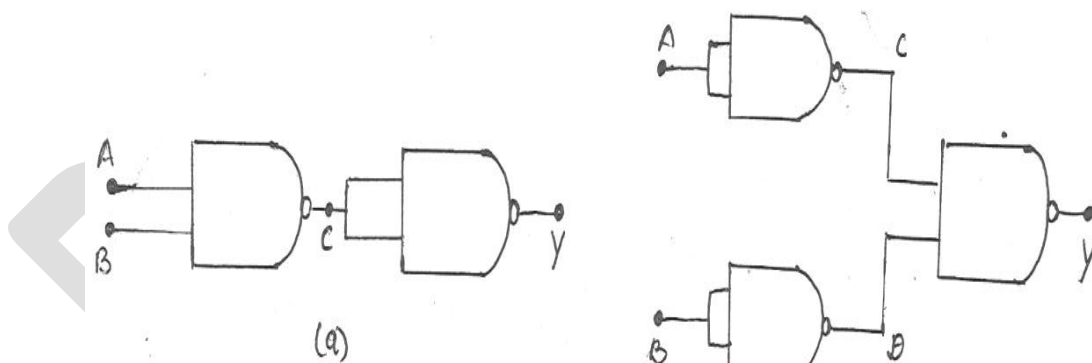
1661. In the figure below, circuit symbol of a logic gate and input wave from is shown.

(a) Name the logic gate, (b) write its truth table and (c) give the output wave form.



1662.

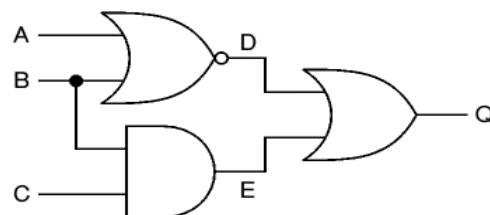
You are given two circuits as shown in fig. which consists of NAND gates. Identify the logic operation carried out by the two circuits.



1663. In the given diagram, is the diode D forward or reversed biased?



1664. Write truth table for output Q in the given circuit:



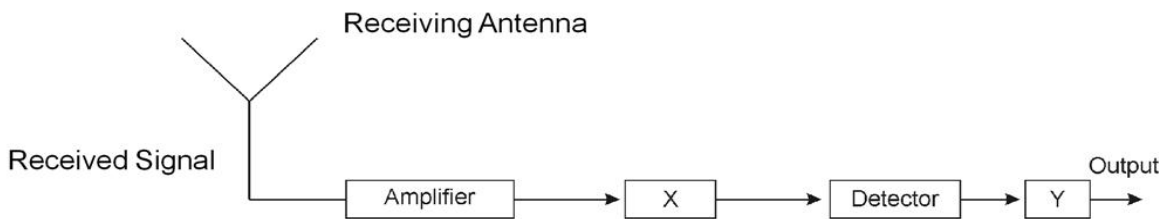
Chapter: 15 Communication System

1665. What is information system?
1666. What is definition of the communication system?
1667. What are the essential part of the communication system?
1668. What is basic conditions for the establishment of connection between two locations?
1669. What is role of channel in communication system?
1670. How many types of communication system are present?
1671. What is point to point communication?
1672. Define broadcasting in context of communication system.
1673. What is difference between point to point and broadcasting communication?
1674. What is definition of the transducer? Why it is necessary in the communication system?
1675. Define transmitter.
1676. What are the properties of transmitter?
1677. What is definition of the receiver in communication system?
1678. Make block diagram of communication system.
1679. Define term attenuation.
1680. Define range in the communication system. How it can be increased?
1681. What is amplifier? What is its use in communication system?
1682. What is noise? In which part of the communication system it is introduced? How it can be removed?
1683. What is repeater? What is use of repeater in communication system?
1684. Define terms signal in communication system m
1685. What are the types of signals?
1686. Differentiate between analogue and digital signals.
1687. Which signal has the discrete values?
1688. Which signal obtains every value between its maximum and minimum value?
1689. What is definition of modulation and demodulation?
1690. Show that digital signals can be represented by the superposition of the many analogue signals.
1691. What is definition of the bandwidth? What is its unit?
1692. What are the modes of propagation in the communication system write name.

1693. What is the ground wave? What is frequency range of Ground Wave?
1694. What is the order of the size of antenna for the effective transmission of the signal?
1695. What is minimum length of a antenna for effective transmission of the waves?
1696. Why high frequency waves cannot be transmitted by the ground wave propagation?
1697. Write down examples of the ground wave propagation.
1698. What is Sky wave? What is frequency range of sky waves?
1699. Why radio waves are reflected back from the middle layer of the atmosphere in sky wave propagation
1700. What is the frequency of the sky wave propagation
1701. Define critical frequency write its expression.
1702. Basically Sky wave propagation is equivalent an optical phenomena write down name of that phenomena in Optics.
1703. If radio waves frequency more than 30MHz are used for this propagation can they be reflected back it no why?
1704. Write down one example of the sky wave propagation.
1705. What are the space waves? Write frequency range of space waves.
1706. What is the space wave propagation?
1707. Which wave propagation is also known as line of sight communication?
1708. Write down name of the communication system which used space wave propagation.
1709. Write the expression of the range in the space wave propagation.
1710. What is modulation?
1711. Why modulation is a necessary for effective transmission of the Waves?
1712. Write down reasons that show necessity of the modulation in the communication.
1713. What is relation between Power delivered by an antenna and wave length.
1714. What is definition of career wave? What is its role in modulation?
1715. Differentiate between carrier wave and message signal.
1716. How many types of modulation write down the name.
1717. Make a diagram showing various types of modulation.
1718. Write down definition of Amplitude Modulation and frequency modulation.
1719. Differentiate between Amplitude Modulation and frequency modulation.
1720. Why frequency modulation is preferred over the amplitude modulation in communication?
1721. What is modulation index? What does it indicate?

1722. Why value of modulation index cannot be more than 1 ?
1723. Write down the formula of modulation index. What is its unit?
1724. What is frequency range of the frequency modulation used for radio broadcasting?
1725. Write an expression of the amplitude modulated wave
1726. What is value of bandwidth in the amplitude modulation
1727. Why frequency modulation is preferred over the amplitude modulation have that television broadcasting
1728. Which type of modulation is required for commercial broadcasting the voice signals?
1729. Make block diagram of the amplitude modulator.
1730. Make block diagram of the transmitter.
1731. Make block diagram of the detector?
1732. Make block diagram of receiver.
1733. What is the function of the IF stage?
1734. Why satellite is used for the long distance transmission?
1735. Draw the labelled diagram describing different modes of propagation.
1736. Name the characteristics of the signal which are changed during the process of the modulation.
1737. What is main advantage of the digital signals?
1738. Which waves are used for the line of sight communication system?
1739. Name the device which increases the range in the communication system?
1740. Name the noise of the TV serials.
1741. Which type of wave propagation show the phenomena of the in total internal reflection?
1742. Name the obstacles in the space wave propagation.
1743. On what factors modulation index depends?
1744. Which physical quantities change in the following modulation
- Aptitude modulation
 - phase Modulation
 - frequency modulation
1745. How analogue signals can be converted into digital signals?
1746. Give the bandwidth of the local telephone system.
1747. By which mode of propagation we can establish communication Beyond The Horizon?
1748. Write down maximum and minimum value of amplitude of amplitude modulated wave.

1749. Block diagram of receiver is given. (a) Identify X and Y (b) State their functions.



1750. A message signal of frequency 10 KHz and peak voltage of 10 volts is used to modulate a carrier of frequency 1MHz and peak voltage of 20 volts. Determine (a) modulation index (b) the side bands produced.

Graph: - Plot a curve b/w

1. Force of interaction between two point charges and distance between both of them
2. Intensity of electric field due to a point charge and distance.
3. Intensity of electric field due to a linearly charged wire and distance.
4. Intensity of electric field due to electric dipole and distance.
5. Intensity of electric field due to a charged sheet and distance
6. Potential due to point charge and distance.
7. Potential due to electric dipole at Axis and distances
8. Capacitance and electric charge project on capacitor
9. Capacitance and potential of capacitor
10. Potential and charge present on capacitor
11. current and time for direct current
12. Potential difference and current for current carrying conductor wire
13. Current density and electric field for a conductor wire
14. Resistance of conductor wire and length of conductor wire
15. Resistance of conductor wire and area of cross section
16. Resistance of wire and temperature
17. Terminal voltage of a cell and current passing through it
18. Intensity of magnetic field and distance for current carrying circular loop
19. Intensity of magnetic field and distance inside a solenoid
20. Intensity of magnetic field due to infinitely current carrying conductor wire and distance
21. Magnetic moment of coil and current
22. Magnetic moment of coil and cross section area
23. Magnetic moment of coil and number of turns

24. Intensity of magnetic field at axial and equatorial point and distance for a magnetic dipole at a bar magnet
25. Magnetic susceptibility and temperature for a diamagnetic material
26. Magnetic susceptibility and temperature for a paramagnetic materials
27. Magnetic susceptibility and temperature ferromagnetic material
28. Induced EMF and rate of change of flux
29. Magnetic flux of coil and current passing through it
30. Voltage and time for alternating current
31. Capacitive reactance and frequency
32. Inductive reactance and frequency
33. Resistance and frequency
34. Resonance curve
35. EMF and number of turns Transformer
36. Angle of deviation and angle of incidence for a prism
37. Object distance and image distance for convex lens
38. Intensity curve in YDSC
39. Intensity curve in single slit diffraction pattern
40. Photoelectric current and intensity of incident radiation
41. Photoelectric current and collector potential at constant intensity and different frequency
42. Photoelectric current and collector potential at constant frequency and different intensity
43. Stopping potential and frequency of incident radiation
44. Binding energy per nucleon and atomic mass number
45. Current and voltage in forward and reverse bias for PN junction diode
46. Input and output wave diagram for half wave rectifier
47. Input and output wave diagram for full wave rectifier
48. current and voltage in Reverse bias for a zener diode
49. Input characteristics curve for transistor
50. Output characteristics curve for transistor
51. Amplitude and frequency for amplitude modulated wave