



			field		
64	If a dielectric is inserted b/w the plates of a charged capacitor, its capacitance	Becomes infinite	Remains constant	decreases	increases✓
65	Selenium is an insulator in the dark but when exposed to light it becomes	Remains insulator	semiconductor	Super conductor	conductor✓
66	special dry black powder is spread over the drum of photocopier is called	neutralizer	Photo powder	turner	toner✓
67	Photo copier and the inkjet printer are examples of	electricity	magnetism	electromagnetism	electrostatics✓
68	Since selenium becomes conductor in light it is called	Photo diode	Photo tube	photocell	Photo conductor✓
69	Charge on an electron was measured by Millikan in	1920	1909✓	1905	1900
70	Electric field intensity inside a hollow charged sphere is	minimum	infinity	maximum	zero✓
71	speed of charging and discharging of a capacitor depends on resistance	charge	Potential difference	current	capacitance✓
72	In a charged capacitor the energy resides in	Dielectric	Positive plate	Negative plate	Field b/w plates✓
73	Electric flux due to a point charge q present inside a closed surface can be calculated by	Lenz's law	Coulomb's law	Ohm's law	Gauss's law✓
74	SI unit of capacitance is	Volt/Coulomb	N/C	volt	Farad✓
75	The charge on the droplet in Millikan experiment is calculated by formula	$Q = V/mgd$	$Q = mg/dv$	$Q = d/mgv$	$Q = mgd/V$ ✓
76	The relation $(\Delta V/\Delta r = V/d)$ represents	Gauss's law	Electric flux	Potential difference	Electric field intensity✓
77	Farad =	Joule/ coulomb	Volt/Coulomb	Coulomb x volt	Coulomb/volt✓
78	Unit of capacitance is	Joule/ coulomb	Volt/Coulomb	Coulomb x volt	Coulomb/volt✓
79	Dielectric is also called	Super conductor	Semi conductor	conductor	insulator✓
80	If a charged body is moving against the electric field it will gain	Potential energy	Mechanical energy	Kinetic energy	electrical Potential energy✓
81	Xerography means	average	Breaking down	Liquid writing	Dry writing✓
82	The term RC has the same unit as that of $(RC =)$	$1/t^2$	t^2	$1/t$	t ✓
83	One electron volt is equal to	$1.6 \times 10^{-19} \text{ J}$ ✓	$1.6 \times 10^{-19} \text{ J}$	$6.25 \times 10^{-18} \text{ J}$	$6.25 \times 10^{-18} \text{ J}$
84	Energy density in case of capacitor is always proportional to	C	E^2 ✓	V^2	ϵ_0
85	Presence of dielectric always	Increase the electrostatic force	decrease the electrostatic	double the electrostatic force	Does not affect the electrostatic



56	The critical temperature for mercury is	7.2K	4.2K✓	1.18K	3.7K
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CH#18(Electronics)

S.#	QUESTIONS	A	B	C	D
1	Depletion region carries	Negative charge	Positive charge	Protons	No charge✓
2	In reverse biasing a p-n junction offers	Low resistance	Zero resistance	Infinite resistance	High resistance✓
3	Semi-conductor diode conducts only when it is	Reverse biased	Not biased	Forward biased✓	All of above
4	Depletion region has	Electrons only	Holes only	Both (a) & (b)	None of these✓
5	The forward current through a semi-conductor diode circuit is due to	Minority charge carriers	electrons	Holes	Majority charge carriers✓
6	The reverse current through a semi-conductor diode circuit is due to	majority charge carriers	electrons	Holes	minority charge carriers✓
7	The diode cannot be used as	rectifier	detector	modulator	Amplifier✓
8	In semi conductor diode the p-type end is usually referred as	cathode	neutral	anode✓	All of above
9	A photo diode is a semi conductor diode usually made from	bismuth	arsenic	antimony	Silicon✓
10	Transistor was discovered by	Young	I.Curie	Shales	John Bardeen✓
11	The potential difference set up across the depletion region is called	Absolute potential	Neutral potential	Potential barrier✓	All of above
12	The potential barrier for germanium at room temperature is	1 volt	7 volt	5 volt	0.3 volt✓
13	The potential barrier for silicon at room temperature is	1 volt	7 volt	5 volt	0.7 volt✓
14	Process of conversion of A.C. into D.C. is called	amplification	modulation	biasing	Rectification✓
15	Conversion of only one half of A.C. into D.C. is called	Full wave amplification	Half wave amplification	Full wave rectification	Half wave rectification✓
16	The number of terminals in a semiconductor diode is	3	4	1	2✓
17	A photo diode is used for	Logic circuits	Automatic switching	Photo detection	all of above ✓
18	The central region of a transistor is called	emitter	collector	base✓	All of above
19	A light emitting diode is made from	Gallium arsenide phosphide	Gallium phosphide	Gallium arsenide	All of above ✓
20	The current gain ratio β of a transistor is given as	$\beta = I_C / I_B$	$\beta = I_B / I_C$	$\beta = 1 / I_C I_B$	$\beta = I_C / I_B$ ✓
21	The equation of voltage gain β of an amplifier can be expressed as	$\beta = V_{in} / V_{out}$	$\beta = I_{in} / I_{out}$	$\beta = I_{out} / I_{in}$	$\beta = V_{out} / V_{in}$ ✓
22	The circuit which changes input signal at the output with a phase shift of 180° is called	diode	switch	inductor	Inverter✓
23	The gain of the non-inverting amplifier can be expressed as	$G = 1 + R_2 / R_1$	$G = R_2 / R_1 - 1$	$G = -R_2 / R_1$	$G = 1 + R_2 / R_1$ ✓



28	In photoelectric effect, γ -rays are completely absorbed with the emission of	protons	neutrons	positrons	Electrons✓
29	In photoelectric effect, light exhibits	Wave-nature	Particle nature✓	Both (a) & (b)	All of above
30	An electric eye operates because of	Compton effect	Photo refraction	Pair production	Photoelectric effect✓
31	The amount of energy required to eject an electron from a metal surface is called	Threshold frequency	Pair production	Photoelectric effect	Work function✓
32	Joule-second is the unit of	energy	heat	work	Plank's constant✓
33	Joule-second is the unit of	energy	heat	work	Angular momentum✓
34	In which of the following phenomena, the electromagnetic radiations show particle property	Polarization	diffraction	interference	Photoelectric effect✓
35	The maximum kinetic energy of emitted photoelectrons depends upon	Temperature of surface	Intensity of incident light	Polarization of light	Frequency of incident light ✓
36	Einstein explained the photo-electric effect on the following assumption that	Light has wave nature	Light are mechanical waves	Both (a) & (b)	Light has particle nature✓
37	A device based on photoelectric effect is called	Photosynthesis	Photo diode	Photo sensitive	photocell✓
38	Einstein explained the photo-electric effect on the following assumption that	Light has wave nature	Light are mechanical waves	Light has particle nature	Light consists of photons or quanta✓
39	The number of photoelectrons ejected is	inversely proportional to intensity of incident light	Directly proportional to frequency of incident light	inversely proportional to frequency of incident light	Directly proportional to intensity of incident light ✓
40	Which one of the following statements is true for photoelectric experiment	Thresh hold frequency depends on the nature of metal surface	No photoelectric emission takes place if the frequency of light is smaller than thresh hold frequency	The energy of photoelectrons depends upon the frequency of light	All of above ✓
41	Einstein's photoelectric equation is given by	$mv_{\max}^2/2 = hf + \phi$	$mv_{\max}^2/2 - hf = \phi$	$mv_{\max}^2/2 = hf - \phi$	$hf =$



59	Blue light has frequency 7.5×10^{14} Hz. Its energy is	3.1 eV✓	6.2 eV	9.3 eV	5.6 eV
60	The speed of light in free space regardless of the state of motion of the observer is	Less than speed of sound	Sometimes constant	variable	Always constant✓
61	The part of special theory of relativity which deals with the accelerated motion is called	Gallilean transformation	Space theory of relativity	special theory of relativity	General theory of relativity✓
62	When a platinum wire heated at about 500°C , it becomes	Dull red✓	White	red	Yellow
63	The platinum wire becomes white at a temperature of	500°C	900°C	1100°C	1600°C ✓
64	The stopping potential for a certain metal is 10 volts, then the work function for the cathode is	$1.6 \times 10^{-19} \text{ J}$	$1.6 \times 10^{-20} \text{ J}$	$1.6 \times 10^{-17} \text{ J}$	$1.6 \times 10^{-18} \text{ J}$ ✓
65	The reverse phenomenon of photoelectric effect is	Photoelectric effect	Compton effect	Pair production	X-ray production✓
66	The amount of energy to create an electron-positron pair is equal to	$m_0^2 c^2 / 2$	$m_0 c^2$	$mv^2 / 2$	$2 m_0 c^2$ ✓
67	The antiparticle of electron is	proton	neutron	muon	Positron✓
68	Photoelectric effect can be explained by	Special theory of light	Wave nature of light	Electromagnetic theory of light	Quantum theory of light✓
69	Wave nature of light is revealed by	Polarization	diffraction	interference	All of above✓
70	Particle nature of light is revealed by	Photoelectric effect	Compton effect	Both (a) & (b) ✓	interference
71	Electron microscope makes practical use of the	Wave nature of electrons✓	Dual nature of electrons	Particle nature of electrons	None of these
72	The SI unit of Planck's constant is	N-m	Volt	J-sec ⁻¹	J-sec✓
73	The photoelectric threshold frequency depends upon	frequency	Frequency of incident light	Intensity of light	Nature of material✓
74	$(K.E)_{\text{max}} = hf - hf_0$ is known as	Compton effect	Pair production	Planck constant	Photo electric equation✓
75	For pair production the energy of a photon must be	Less than $2 m_0 c^2$	Equal to $m_0 c^2$	Greater than $2 m_0 c^2$	Equal to $2 m_0 c^2$ ✓
76	Theory of relativity which deals with non-inertial frame of reference is called	Classical theory	Quantum theory	General theory of relativity✓	Special theory of relativity
77	Wave nature of light appears in	Photoelectric effect	Pair production	Compton effect	Interference✓
78	Wave nature of light appears in	Photoelectric effect	Pair production	Compton effect	diffraction✓
79	Wave nature of light appears in	Photoelectric effect	Pair production	Compton effect	Polarization ✓
80	Electron microscope makes use of electron beam because energetic electrons have	Very small charge	Very large momentum	Very small size	Very short De-Broglie



					wavelength✓
81	If speed of light were infinite then moving mass $m =$	0	$2m_0$	m_0 ✓	Infinite
82	Rest mass energy of electron-positron pair is	2MeV	5MeV	1MeV	1.02MeV✓
83	When light falls on a metal surface, photo electrons are emitted. If the intensity of the light is increased, which of the following will increase	The velocity of the emitted electrons	The minimum K.E. of the emitted electrons	The maximum K.E. of the emitted electrons	The number of electrons emitted per second✓
84	Tick the correct statement	A perfectly black body is one which absorbs all the radiations incident on it	A perfectly black body when hot, emits full radiations.	Black body radiation is also called temperature radiation	All of above✓
85	As the temperature of a black body is raised, the wavelength corresponding to maximum intensity	Shifts towards longer wavelength	Remains the same	Shifts towards lower frequency	Shifts towards shorter wavelength✓
86	Emission of electron by metals on heating is called	Secondary emission	Field effect	Photoelectric effect	Thermionic emission✓
87	By using NAVSTAR speed of an object can now be determined to an accuracy of	20 cm / sec	760 cm / sec	50 cm / sec	2 cm / sec✓
88	The radius of atom is of the order of	10^{10} m	10^{-14} m	10^{-10} m✓	10^{-14} m
89	When electron and positron are annihilated, the number of photons produced	2	2✓	3	None
90	Davison and Germer indicate in their experiment	Electron reflection	Electron polarization	Electron diffraction✓	Electron refraction
91	The total amount of energy radiated per unit orifice area of cavity radiator per unit time is directly proportional to	T	T^2	T^3	T^4 ✓

CH#20(Atomic Spectra)

S.#	QUESTIONS	A	B	C	D
1	The radiations emitted from hydrogen filled discharge tube shows	Band spectrum	Line spectrum✓	Continuous spectrum	Absorption spectrum
2	Real mass of an electron is	9.10×10^{-27} kg	9.10×10^{-28} kg	9.10×10^{-29} kg	9.10×10^{-31} kg✓
3	Bohr's atomic model of hydrogen was proposed by Niel Bohr in	1925	1928	1915	1913✓
4	In Bohr atom model, the electron does not fall into the nucleus because	Electron has negative charge	The quantum rules do not	The electron is not a particle	The electrostatic attraction is