PHYSICS   224-1st Annual-(INTER PART – II)   Time Allowed : 20 Minutes
Q.PAPER – II (Objective Type)   GROUP – II   Maximum Marks : 17
                        PAPER CODE = 8476   LHR–2–24

Note : Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

1-1	What is the critical temperature of Yttrium Barium Copper Oxide ($YBa_2Cu_3.O_7$) :
	(A) 4.2 K (B) 110 K (C) 163 K (D) 7.2 K
2	One henry (H) is defined as :
	(A) $1H = 1VS^{-1}A^{-1}$ (B) $1H = 1VSA$ (C) $1H = 1VSA^{-1}$ (D) $1H = 1VS^{-1}A$
3	Choose the photon of highest energy among the following :
	(A) X-rays (B) Infrared (C) Radiowaves (D) Gamma rays
4	A particle having a charge of $2e$ falls through a potential difference of 3V. The energy acquired by it will be :
	(A) 5 eV (B) 1.5 eV (C) 6 eV (D) 0.6 eV
5	SI unit of equivalent dose is :
	(A) Sievert (B) Gray (C) Rad (D) Curie
6	If peak value of AC voltage is 100 V, then the peak to peak value will be :
	(A) 200 V (B) 50 V (C) 70 V (D) 1000 V
7	The direction of magnetic lines of force around a straight current carrying conductor is found by :
	(A) Ampere's law (B) Coulomb's law (C) Lenz's law (D) Right hand rule
8	Which of the following is the correct relation between electric intensity E and potential difference ΔV :
	(A) $E = -\dfrac{\Delta V}{\Delta r}$ (B) $\Delta V = -\dfrac{E}{\Delta r}$ (C) $E = \Delta V + \Delta r$ (D) $E = \dfrac{\Delta V^2}{\Delta r^2}$
9	Which of the following requires no external bias for its operation :
	(A) LED (B) Photo diode (C) Photo-voltaic cell (D) Transistor
10	The energy of K_α X-rays is :
	(A) $hf_{k\alpha} = E_M - E_K$ (B) $hf_{k\alpha} = E_L - E_K$ (C) $hf_{k\alpha} = E_K - E_M$ (D) $hf_{k\alpha} = E_N - E_M$
11	The power factor of a series resonance circuit at resonance frequency is :
	(A) Zero (B) Infinite (C) 2 (D) 1
12	In AVO meter, the part which connects the galvanometer with the relevant measuring circuit is known as :
	(A) Range switch (B) Diode (C) Ground (D) Function selector
13	How much time is required for the complete decay of a radioactive element :
	(A) Five half lives (B) Two half lives (C) Ten half lives (D) Infinite
14	Choose the device which converts electrical energy into mechanical energy :
	(A) Motor (B) Generator (C) Transformer (D) Inductor
15	The current-voltage graph of an ohmic material is :
	(A) Curve (B) Straight line (C) Parabolic (D) Circular
16	The phase shift between the input and output of a common-emitter transistor amplifier is :
	(A) 90° (B) 180° (C) 60° (D) 45°
17	Which of the following factor is called Compton Wavelength :
	(A) $\dfrac{h}{m_o c}$ (B) $\dfrac{m_o c}{h}$ (C) $\dfrac{hc}{m_o}$ (D) $\dfrac{m_o}{hc}$

Note : Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

1-1	For which material medium, force between two charged particles is maximum :			
	(A) Ammonia	(B) Germanium	(C) Mica	(D) Teflon
2	The force between two similar unit charges separated one meter apart in air is :			
	(A) Zero	(B) One Newton	(C) $9 \times 10^9 N$	(D) $9 \times 10^{-9} N$
3	Kirchhoff's 2nd rule is based on :			
	(A) Energy conservation	(B) Mass conservation		
	(C) Charge conservation	(D) Momentum conservation		
4	Which one has least resistance :			
	(A) Galvanometer	(B) Ammeter	(C) Voltmeter	(D) Ohm-meter
5	A voltmeter is always connected in :			
	(A) Parallel	(B) Series	(C) Perpendicular	(D) Oblique
6	If we make magnetic field stronger the value of induced current is :			
	(A) Decreased	(B) Increased	(C) Vanishes	(D) Constant
7	The device which consume electrical energy is called :			
	(A) Generator	(B) Motor	(C) Load	(D) Dissipaters
8	At high frequency the current through a capacitor of A.C. circuit will be :			
	(A) Small	(B) Infinite	(C) Zero	(D) Large
9	A.C. through inductor, the applied voltage :			
	(A) Leads the current $\frac{\pi}{2}$	(B) Lags the current $\frac{\pi}{2}$		
	(C) In phase	(D) Out of phase 180°		
10	The crystalline structure of NaCℓ is :			
	(A) Trigonal	(B) Cubical	(C) Tetragonal	(D) Hexagonal
11	Minimum diode required for full wave rectifier are :			
	(A) 1	(B) 3	(C) 2	(D) 4
12	Photovoltaic cell formed from :			
	(A) Arsenic	(B) Carbon	(C) Germanium	(D) Silicon
13	Unit of Plank's constant is same as that of :			
	(A) Entropy	(B) Angular momentum	(C) Acceleration	(D) Force
14	Stefen Boltzmann Law is given by :			
	(A) $E = hf$	(B) $E = mc^2$	(C) $E = \sigma T^4$	(D) $\lambda \times T = $ constant
15	Radiation produced from TV picture tube is :			
	(A) Gamma rays	(B) X-rays	(C) Infrared light	(D) β-rays
16	What is difference in isotopes :			
	(A) Number of electron	(B) Number of proton		
	(C) Charge number	(D) Number of neutron		
17	A proton consists of quark which are :			
	(A) All up	(B) One up, two down	(C) Two up, one down	(D) All down

(Academic Sessions 2019 – 2021 to 2021 – 2023)

PHYSICS 223-1st Annual-(INTER PART – II) Time Allowed : 20 Minute.

Q.PAPER – II (Objective Type) GROUP – II Maximum Marks : 17

PAPER CODE = 8478 LHR-12-2-23

Note : Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

1-1	Wave behaviour of matter is prominent at --- level :			
	(A) Macroscopic	(B) Mega structure	(C) Microscopic	(D) Any object size
2	The points where AC crosses the time axis corresponds to phase :			
	(A) $\frac{\pi}{2}$ or $3\frac{\pi}{2}$	(B) 0 or π	(C) $\frac{\pi}{4}$ or $3\frac{\pi}{4}$	(D) 0 or $\frac{\pi}{2}$
3	A galvanometer coil of resistance Rg gives full scale deflection with current Ig. What is required shunt resistance Rs. = ----- if range of ammeter is I = 2Ig :			
	(A) Rg	(B) 2 Rg	(C) Rg / 2	(D) 4 Rg
4	A combination of two back to back PN junctions is --- :			
	(A) Operational amplifier	(B) Digital gate	(C) Transistor	(D) Photo diode
5	The --- work on the principle of beats :			
	(A) DC motors	(B) Metal detectors	(C) Choke coils	(D) AC generators
6	1 J = --- eV :			
	(A) 1.6×10^{-19}	(B) 6.25×10^{18}	(C) 9.6×10^{-18}	(D) 9×10^{9}
7	Faraday and Maxwell unified electric and --- force :			
	(A) Weak nuclear	(B) Strong nuclear	(C) Gravitational	(D) Magnetic
8	Which is not true for ideal step up transformer :			
	(A) $I_s < I_p$	(B) $P_{out} = P_{in}$	(C) $V_s > V_p$	(D) $N_s = N_p$
9	A rod of length ℓ_o in a stationary frame is accelerated at speed of light. Its length measured perpendicular to its direction of motion is :			
	(A) $\frac{\ell_o}{2}$	(B) Zero	(C) ℓ_o	(D) $2\ell_o$
10	The slope of graph between charge and time for capacitor charging is large initially when the product RC is :			
	(A) Small	(B) Large	(C) Intermediate	(D) Infinite
11	A ductile wire is stretched to double of its original length, %age elongation is --- :			
	(A) 200%	(B) 50%	(C) 100%	(D) 400%
12	The fractional change in resistance is minimum for --- if temperature change is same for all :			
	(A) Platinum	(B) Nichrome	(C) Copper	(D) Constanton
13	If ionization energy of hydrogen atom is E_o, the energy required to remove electron from hydrogen in state n = 4 is :			
	(A) $\frac{E_o}{4}$	(B) $4E_o$	(C) $\frac{E_o}{16}$	(D) Zero
14	The value of voltage gain of a transistor amplifier (common emitter) is of the order of :			
	(A) Thousands	(B) Millions	(C) Fraction	(D) Hundreds
15	Energy required to remove all nucleons from nuclide of --- is maximum :			
	(A) Fe^{58}	(B) U^{235}	(C) Ba^{141}	(D) H^2
16	In alternating current, --- behave like resistors :			
	(A) Inductors	(B) Capacitors	(C) Transformers	(D) Generators
17	The potential of --- is least in CRO :			
	(A) Anode	(B) Screen	(C) Cathode	(D) Grid

Roll No. _____ (To be filled in by the candidate)

Note : Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

1-1	Work done on a charge moving in a uniform magnetic field is :
	(A) Zero (B) Positive (C) Negative (D) Maximum
2	The most common source of alternating voltage is :
	(A) Motor (B) Cell (C) Generator (D) Thermocouple
3	Compton effect is associated with :
	(A) Gamma rays (B) Beta rays (C) X-rays (D) Positive rays
4	Alpha particle carries a charge of :
	(A) $+2e$ (B) $-2e$ (C) $+e$ (D) Zero
5	The difference of potential energy between two points per unit charge is :
	(A) Electrical potential (B) Potential difference (C) Absolute potential (D) All of these
6	The devices which are used to convert various physical quantities into electrical voltages are called :
	(A) Filters (B) Sensors (C) Rectifiers (D) Amplifiers
7	The current flowing through each resistor of equal resistances in parallel combination is :
	(A) Different (B) Zero (C) Same (D) Infinite
8	The Boolean expression of NAND gate is :
	(A) $X = A . B$ (B) $X = \bar{A}$ (C) $X = \overline{A.B}$ (D) $X = A + B$
9	Energy released by conversion of 1 amu of mass is :
	(A) $1.6 \times 10^{-19} ev$ (B) $1.6 \times 10^{-19} Mev$ (C) $200\, Mev$ (D) $931\, Mev$
10	The energy stored in the inductor per unit volume is :
	(A) $\dfrac{B^2}{2\mu_o^2}$ (B) $\dfrac{\mu_o}{2B}$ (C) $\dfrac{\mu_o}{2B^2}$ (D) $\dfrac{B^2}{2\mu_o}$
11	The space between the plates of the capacitor is filled by a dielectric of dielectric constant 'k'. The capacitance of the capacitor :
	(A) Increased by a factor ' k ' (B) Increased by a factor ' k^2 '
	(C) Decreased by factor ' k ' (D) Remains unchanged
12	The mean value of A.C. in one complete cycle is :
	(A) 1 (B) Zero (C) I_o (D) $\dfrac{I_o}{\sqrt{2}}$
13	Unit of self inductance is :
	(A) Weber (B) Henry (C) Tesla (D) Farad
14	The number of crystal systems are :
	(A) Three (B) Five (C) Fourteen (D) Seven
15	Beam of electron is also called :
	(A) X-rays (B) Alpha rays (C) Gamma rays (D) Cathode rays
16	Light emitting diodes (LEDs) are made from semiconductors :
	(A) Silicon (B) Germanium (C) Gallium arsenide (D) Carbon
17	In electronic transition, atom cannot emit :
	(A) Infrared radiations (B) Visible radiations
	(C) Gamma radiations (D) Ultraviolet radiations

(Academic Sessions 2018 – 2020 to 2020 – 2022)

PHYSICS 222-(INTER PART – II) Time Allowed : 20 Minutes
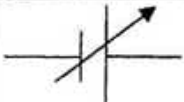
Q.PAPER – II (Objective Type) GROUP – II Maximum Marks : 17

PAPER CODE = 8474 LWR-G2-22

Note : Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

1-1	$\frac{E}{B}$ has the unit of :
	(A) meter (B) ms^{-1} (C) ms^{-2} (D) s^{-2}
2	If V_o is peak value of A.C. voltage then mean square value of voltage is :
	(A) $\frac{V_o}{\sqrt{2}}$ (B) V_o^2 (C) $\frac{1}{2}V_o^2$ (D) V
3	A black body is both an ideal absorber and an ideal :
	(A) Reflector (B) Radiator (C) Conductor (D) Insulator
4	Energy given out per nucleon per fission of heavy element like uranium is :
	(A) 200 MeV (B) 208 MeV (C) 5 MeV (D) 0.9 MeV
5	Electric flux through a closed surface enclosing a charge depends on :
	(A) Medium (B) Size (C) Shape (D) Location of charge
6	is symbol of :
	(A) High tension battery (B) Low tension battery
	(C) Variable voltage battery (D) Zero resistance battery
7	Thermo-couples produce electric energy by :
	(A) Heat (B) Chemical energy (C) Sunlight (D) Mechanical energy
8	When PN junction is conducting then its resistance is of the order of :
	(A) Mega Ohm (B) Kilo Ohm (C) 100 Ohm (D) Few Ohms
9	Two quark combination forms :
	(A) Mesons (B) Baryons (C) Leptons (D) No Composite particle
10	Lenz's law is also a statement of law of conservation of :
	(A) Linear momentum (B) Angular momentum (C) Energy (D) Charge
11	Unit of electric intensity is same as :
	(A) Force (B) Potential gradient (C) Viscosity (D) Magnetic field
12	If the frequency of A.C is 40 Hz then current passing through filament bulb get brilliance :
	(A) 100 times (B) 80 times (C) 40 times (D) 50 times
13	A metal meter rod is moving at the speed of 0.5 ms^{-1} in the direction parallel to a 0.5 T magnetic field, emf will be :
	(A) 0.25 V (B) 0.5 V (C) Zero (D) 0.125 V
14	In cubical crystal, all the sides meet at :
	(A) Acute angle (B) Abtuse angle (C) Right angle (D) 45°
15	Work done by a magnetic force of 5 N when a q charge is displaced 2 m is :
	(A) Non-zero (B) Zero (C) 10 J (D) 5 J
16	The observations on objects moving very fast, approaching the speed of light, are well explained by :
	(A) Quantum theory (B) Newton's law
	(C) Special theory of relativity (D) Kepler's law
17	Plank's constant has the unit of :
	(A) Linear momentum (B) Angular momentum (C) Torque (D) Force

Roll No. _____ (To be filled in by the candidate)

Note : Four possible answers A, B, C and D to each question are given. The choice which you think is correct,
fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling
two or more circles will result in zero mark in that question.

1-1	The quantity $-\dfrac{\Delta V}{\Delta r}$ is called :
	(A) Electric potential (B) Electric energy (C) Potential energy (D) Potential gradient
2	If the potential difference across two plates of capacitor is doubled, the energy in it will be :
	(A) Two times (B) Eight times (C) Four times (D) Remains same
3	Kirchhoff's second rule is a way of stating conservation of :
	(A) Mass (B) Charge (C) Energy (D) Momentum
4	The brightness of spot on CRO screen is controlled by :
	(A) Plates (B) Cathode (C) Anode (D) Grid
5	The e/m of neutron is :
	(A) Less than electron (B) Zero (C) Greater than electron (D) The same as electron
6	The energy stored in inductor is :
	(A) $\dfrac{1}{2}LI^2$ (B) $\dfrac{1}{2}LI$ (C) $\dfrac{1}{2}L^2I$ (D) $\dfrac{1}{2}L^2I^2$
7	The unit of self inductance is :
	(A) Weber (B) Tesla (C) Henry (D) Farad
8	At high frequency the value of reactance of capacitor will be :
	(A) Small (B) Zero (C) Large (D) Infinite
9	When 10 V are applied to an A.C. circuit, the current flowing in it 100 mA, its impedance is :
	(A) 10 Ohm (B) 100 Ohm (C) 1000 Ohm (D) 1 Ohm
10	The critical temperature of mercury is :
	(A) 1.18 K (B) 4.2 K (C) 3.72 K (D) 7.2 K
11	The current gain β of the transistor is given by :
	(A) $\beta = \dfrac{I_B}{I_C}$ (B) $\beta = I_B + I_C$ (C) $\beta = I_B - I_C$ (D) $\beta = \dfrac{I_C}{I_B}$
12	The input resistance of an operational amplifier is :
	(A) Zero (B) Low (C) High (D) Equal to output resistance
13	The value of Plank's constant h is :
	(A) $6.63 \times 10^{-34} Js$ (B) $6.63 \times 10^{-34} J/s$ (C) $6.63 \times 10^{-34} Js^2$ (D) $6.63 \times 10^{-34} J/s^2$
14	Albert Einstein was awarded Noble Prize in Physics in :
	(A) 1905 (B) 1911 (C) 1918 (D) 1921
15	Radius of first Bohr orbit of hydrogen atom is :
	(A) 0.053 nm (B) 0.053 mm (C) 0.053 µm (D) 0.053 m
16	Gamma rays emitted from radioactive element have speed :
	(A) $1 \times 10^7 ms^{-1}$ (B) $1 \times 10^8 ms^{-1}$ (C) $3 \times 10^8 ms^{-1}$ (D) $4 \times 10^{19} ms^{-1}$
17	The dead time of G.M. counter is :
	(A) $10^{-3} s$ (B) $10^{-4} s$ (C) $10^{-6} s$ (D) $10^{-8} s$

Roll No. _____ (To be filled in by the candidate)

(Academic Sessions 2017 – 2019 to 2019 – 2021)

PHYSICS   221-(INTER PART – II)   Time Allowed : 20 Minutes
Q.PAPER – II (Objective Type)   GROUP – II   Maximum Marks : 17
PAPER CODE = 8472

Note :   Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

1-1	When some dielectric is inserted between the plates of a capacitor then capacitance :				
	(A) Increased	(B) Decreased	(C) Zero	(D) Infinity	
2	Coulomb per volt is called :				
	(A) Ampere	(B) Joule	(C) Henry	(D) Farad	
3	Kirchhoff's first rule is a manifestation of law of conservation of :				
	(A) Mass	(B) Energy	(C) Charge	(D) Kinetic energy	
4	Work done on a charged particle moving in uniform magnetic field is :				
	(A) Maximum	(B) Zero	(C) Minimum	(D) Negative	
5	Output wave form of sweep or time base generator is :				
	(A) Saw tooth wave	(B) Digital wave	(C) Sinusoidal wave	(D) Square wave	
6	Energy stored in the inductor is in the form of :				
	(A) Electrical energy	(B) Magnetic energy			
	(C) Kinetic energy	(D) Chemical energy			
7	The principle of an electric generator is based upon :				
	(A) Ampere's law	(B) Faraday's law	(C) Coulomb's law	(D) Kirchhoff's law	
8	The device which allows only flow of A.C. through it is :				
	(A) Capacitor	(B) Inductor	(C) Battery	(D) Thermistor	
9	S.I unit of impedance is :				
	(A) Henry	(B) Hertz	(C) Ampere	(D) Ohm	
10	Very weak magnetic field produced by brain can be detected by :				
	(A) Compass	(B) Metallic needle	(C) Squid	(D) Liquid	
11	If $R_1 = 10K\Omega$ and $R_2 = 100K\Omega$ then gain of inverting amplifier is :				
	(A) – 11	(B) – 10	(C) 10	(D) 11	
12	Automatic functioning of street light can be done by the use of :				
	(A) Inductor	(B) Capacitor	(C) Comparator	(D) Thermistor	
13	When platinum wire is heated. It changes to cherry red at temperature :				
	(A) $500 \,^{\circ}C$	(B) $900 \,^{\circ}C$	(C) $1100 \,^{\circ}C$	(D) $1300 \,^{\circ}C$	
14	The rest mass energy of an electron positron pair is :				
	(A) 0.51 Mev	(B) 1.02 Mev	(C) 1.2 Mev	(D) 1.00 Mev	
15	The value of Rydberg constant is :				
	(A) $1.0974 \times 10^7 \, m^{-1}$	(B) $6.02 \times 10^{-34} \, m^{-1}$	(C) $3 \times 10^8 \, m^{-1}$	(D) $1.6 \times 10^{19} \, m^{-1}$	
16	The half life of uranium -239 is :				
	(A) 1620 years	(B) 3.8 days	(C) 2.5 days	(D) 23.5 minutes	
17	Binding energy per nucleon is maximum for :				
	(A) Helium	(B) Iron	(C) Radium	(D) Polonium	

(Academic Sessions 2015 – 2017 to 2017 – 2019)

PHYSICS   219-(INTER PART – II)   Time Allowed : 20 Minutes

Q.PAPER – II (Objective Type)   GROUP – I   Maximum Marks : 17

PAPER CODE = 8477

Note : Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

1-1	The energy of photon is given by :
	(A) $\frac{1}{2}mv^2$ (B) $v_o e$ (C) $m_o c^2$ (D) hf
2	The sum of negative and positive peak values is :
	(A) Average value (B) rms value (C) Peak value (D) p-p value
3	The unit of $\overline{E}$ is NC^{-1} and that of $\overline{B}$ is $NA^{-1} m^{-1}$ then the unit of $\frac{\overline{E}}{\overline{B}}$ is :
	(A) ms^{-2} (B) $m^{-1}s^{-1}$ (C) ms (D) ms^{-1}
4	The common emitter current amplification factor β is given by :
	(A) $\frac{I_C}{I_E}$ (B) $\frac{I_C}{I_B}$ (C) $\frac{I_E}{I_B}$ (D) $\frac{I_B}{I_C}$
5	Resistance in choke is :
	(A) Large (B) Very small (C) Zero (D) Infinite
6	Sec/Ohm is equal to :
	(A) Farad (B) Coulomb (C) Joule (D) Ampere
7	Number of neutrons in $^{235}_{92}U$:
	(A) 92 (B) 235 (C) 143 (D) 327
8	Commutators are used in :
	(A) D.C. generators (B) A.C. generators (C) A.C. motor (D) A.C. rotator
9	The factor $\frac{h}{m_o c}$ in Compton equation has the dimension of :
	(A) Pressure (B) Length (C) Mass (D) Momentum
10	If a charged body is moved against the electric field, it will gain :
	(A) P.E. (B) K.E (C) Mechanical energy (D) Electrical potential energy
11	In p-type substances, the majority charge carriers are :
	(A) Electrons (B) Protons (C) Holes (D) Neutrons
12	When a wire of resistance R is cut into two equal parts then resistance of each wire is :
	(A) Double (B) Half (C) Remain same (D) One forth
13	Energy of the 4th orbit in hydrogen atom is :
	(A) − 2.51 eV (B) − 3.50 eV (C) − 13.6 eV (D) − 0.85 eV
14	The gain of non-inverting amplifier is :
	(A) $1+\frac{R_2}{R_1}$ (B) $1+\frac{R_1}{R_2}$ (C) $\frac{-R_2}{R_1}$ (D) $\frac{-R_1}{R_2}$
15	X-rays are the electromagnetic radiations having the wavelength in range :
	(A) $10^{-12} m$ (B) $10^{-10} m$ (C) $10^{-8} m$ (D) $10^{-6} m$
16	To construct a step up transformer :
	(A) $N_s > N_p$ (B) $N_s < N_p$ (C) $N_s = N_p$ (D) $N_s N_p = 1$
17	The magnetic force is simply a :
	(A) Reflecting force (B) Restoring force
	(C) Deflecting force (D) Gravitational force

Note : Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

1-1	The value of $\frac{e}{m}$ is smallest for :			
	(A) Proton	(B) Electron	(C) β-particle	(D) Positron
2	At what frequency will an inductor of 1.0 H have a reactance of 500Ω :			
	(A) 50 Hz	(B) 80 Hz	(C) 500 Hz	(D) 1000 Hz
3	The life time of an electron in an excited state is about $10^{-8}s$. What is its uncertainty in energy during this time :			
	(A) $6.63 \times 10^{-34} J$	(B) $9.1 \times 10^{-31} J$	(C) $1.05 \times 10^{-26} J$	(D) $7.2 \times 10^{-15} J$
4	The binding energy per nucleon is maximum for :			
	(A) Hydrogen	(B) Nitrogen	(C) Uranium	(D) Iron
5	The electrostatic force between two charges is 42 N. If we place a dielectric of $\varepsilon_r = 2.1$ between the charges then the force become equal to :			
	(A) 42 N	(B) 84 N	(C) 20 N	(D) 2 N
6	The Boolean expression of NAND gate is :			
	(A) $X = A.B$	(B) $X = \bar{A}$	(C) $X = \overline{A.B}$	(D) $X = A + B$
7	The value of charge on 1.0×10^7 electrons is :			
	(A) $1.6 \times 10^{-12} C$	(B) $1.6 \times 10^{+11} C$	(C) $1.6 \times 10^{-19} C$	(D) $1.6 \times 10^{+19} C$
8	Which factor does not affect the conductivity of PN-junction diode :			
	(A) Doping	(B) Temperature	(C) Voltage	(D) Pressure
9	By mass spectrograph we can find the value of mass by using formula :			
	(A) $m = \left(\frac{e^2 r^2}{2V}\right) B^2$	(B) $m = \left(\frac{er^2}{2V}\right) B^2$	(C) $m = \left(\frac{eV}{2r^2}\right) B$	(D) $m = \left(\frac{eV^2}{2r}\right) B$
10	Maximum emf generated in a generator is :			
	(A) $\varepsilon_o = \varepsilon \sin \theta$	(B) $\varepsilon = \varepsilon_o \sin \theta$	(C) $\varepsilon_o = N\omega AB \sin \theta$	(D) $\varepsilon_o = N\omega AB$
11	It is required to suspend a proton of charge 'q' and mass 'm' in an electric field the strength of the field must be :			
	(A) $E = \frac{mg}{qv}$	(B) $E = \frac{mg}{q}$	(C) $E = \frac{q}{mg}$	(D) $E = \frac{qv}{B}$
12	The velocity of an oscillating charge as it moves to and fro along the wire is :			
	(A) Infinite	(B) Constant	(C) Changing	(D) Zero
13	Henry is equal to =			
	(A) VSA^{-1}	(B) $VS^{-1}A$	(C) $V^{-1}S^{-1}A$	(D) $V^{-1}S^{-1}A^{-1}$
14	Good conductors have conductivities of the order of :			
	(A) $10^{-7}(\Omega m)^{-1}$	(B) $10^7(\Omega m)^{-1}$	(C) $10^2(\Omega m)^{-1}$	(D) $10^{-2}(\Omega m)^{-1}$
15	The unit of $\vec{E}$ is NC^{-1} and that of $\vec{B}$ is $NA^{-1}m^{-1}$ then the unit of $\frac{E}{B}$ is :			
	(A) ms^{-2}	(B) ms	(C) $m^{-1}s^{-1}$	(D) ms^{-1}
16	The numerical value of Stefen's constant is :			
	(A) 5.67×10^{-8}	(B) 2.9×10^{-3}	(C) 6.63×10^{-34}	(D) 1.6×10^{-19}
17	The numerical value of Rydberg's constant is :			
	(A) 1.0974×10^7	(B) 1.0974×10^{-7}	(C) 1.0974×10^{14}	(D) 1.0974×10^{-14}

PHYSICS   218-(INTER PART – II)   Time Allowed : 20 Minutes
Q.PAPER – II (Objective Type)   GROUP – I   Maximum Marks : 17

PAPER CODE = 8473

Note : Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

1-1	If F_1 and F_2 are the magnetic forces acting on α-particle and electron respectively, when moving perpendicular to the magnetic field then :	
	(A) $F_1 = F_2$ (B) $F_1 > F_2$ (C) $F_1 < F_2$ (D) $F_1 = 4F_2$	
2	For non-inverting amplifier, $R_1 = \infty$ and $R_2 = 0$ ohm, the gain of non-inverting amplifier is :	
	(A) – 1 (B) Zero (C) + 1 (D) Infinite	
3	The half life of Radon is :	
	(A) 23.5 minutes (B) 3.8 days (C) 1620 years (D) 4.5×10^9 years	
4	Lenz's law deals with :	
	(A) Induced emf (B) Induced current (C) Power (D) Electrical energy	
5	Two oppositely charged balls A and B attract the third ball C, when placed near them turn by turn. The third ball C must be :	
	(A) Positively charged (B) Negatively charged	
	(C) Electrically neutral (D) Positively and negatively charged	
6	The energy of the photon of wavelength 500 nm is :	
	(A) 3.10 eV (B) 2.49 eV (C) 1.77 eV (D) 1.52 eV	
7	mho m^{-1} is the SI unit of :	
	(A) Conductance (B) Conductivity (C) Resistance (D) Resistivity	
8	The longest wavelength of Paschen series is :	
	(A) 656 nm (B) 1094 nm (C) 1875 nm (D) 2000 nm	
9	The unit of $\sqrt{LC}$ is :	
	(A) Second (B) Ampere (C) Hertz (D) Farad	
10	At what frequency, 1 H inductance offers same impedance as 1μF capacitor :	
	(A) 50 Hz (B) 159 Hz (C) 512 Hz (D) 1590 Hz	
11	The electric potential at a mid-point in an electric dipole is :	
	(A) 0 V (B) 0.5 V (C) 1 V (D) 1.5 V	
12	Very weak magnetic field produced by brain can be detected by :	
	(A) Compass (B) Metallic needle (C) Squids (D) Liquids	
13	If a step-up transformer were 100% efficient, the primary and secondary windings would have the same :	
	(A) Current (B) Power (C) Voltage (D) Direction of winding	
14	The factor h/m_oC in Compton equation has the dimensions of :	
	(A) Pressure (B) Length (C) Momentum (D) Plank constant	
15	When a metal is heated sufficiently electrons are given off by the metal. This phenomenon is known as :	
	(A) Photoelectric effect (B) Piezo electric effect	
	(C) Thermionic emission (D) Secondary emission	
16	The mass spectrum of naturally occurring neon shows the most abundant isotope has atomic mass :	
	(A) 19 (B) 20 (C) 21 (D) 22	
17	The wavelength associated with the proton moving at a speed of 40 m/s is :	
	(A) 7.20 nm (B) 9.02 nm (C) 15.7 nm (D) 17.3 nm	

(Academic Sessions 2015 – 2017 & 2016 – 2018)

PHYSICS   218-(INTER PART – II)   Time Allowed : 20 Minutes

Q.PAPER – II (Objective Type)   GROUP – II   Maximum Marks : 17

PAPER CODE = 8476

Note : Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

1-1	Substances which break just after the elastic limit is reached is called as :
	(A) Ductile substances (B) Hard substances
	(C) Brittle substances (D) Soft substances
2	When motor is just started, back emf is almost :
	(A) Maximum (B) Zero (C) Minimum (D) Infinite
3	The photon with energy greater than 1.02 Mev can interact with matter as :
	(A) Photoelectric effect (B) Compton effect
	(C) Pair production (D) Annihilation of matter
4	The unit of electric intensity other than NC^{-1} is :
	(A) V/A (B) V/m (C) V/C (D) N/V
5	The most useful tracer isotopes for the treatment of thyroid glands is :
	(A) Cobalt-60 (B) Carbon-14 (C) Iodine-131 (D) Strontium-90
6	High frequency radio wave is called as :
	(A) Fluctuate wave (B) Carrier wave (C) Matter wave (D) Mechanical wave
7	The S.I. unit of magnetic induction is :
	(A) Weber (B) Tesla (C) Gauss (D) Newton
8	The electric field created by positive point charge is :
	(A) Radially inward (B) Zero (C) Circular (D) Radially outward
9	The Boolean expression of NAND gate is :
	(A) $X = A.B$ (B) $X = \overline{A}$ (C) $X = \overline{A.B}$ (D) $X = A + B$
10	In electron transition from power to higher orbit atom can not emit :
	(A) γ-rays (B) Ultraviolet rays (C) Visible light (D) Infrared
11	The impedance Z can be expressed as :
	(A) $Z = \dfrac{V_{rms}}{I_{rms}}$ (B) $Z = \dfrac{I_{rms}}{V_{rms}}$ (C) $Z = I + V$ (D) $Z = I - V$
12	The value of e/m is smallest for :
	(A) Proton (B) Electron (C) β-particle (D) Positron
13	Nuclear fission chain reaction is controlled by using :
	(A) Steel rods (B) Graphite rods (C) Cadmium rods (D) Platinum rods
14	Henry is S.I. unit of :
	(A) Current (B) Resistance (C) Flux (D) Self induction
15	Resistance tolerance for gold colour is :
	(A) 50% (B) 30% (C) 20% (D) 5%
16	Automatic functioning of street light can be done by the use of :
	(A) Inductor (B) Capacitor (C) Comparator (D) Thermistor
17	The dimension of Planck's constant is same as that of :
	(A) Energy (B) Power (C) Acceleration (D) Angular momentum

Objective
Paper Code
8475

Intermediate Part Second
PHYSICS (Objective) **GROUP - I**
Time: 20 Minutes   Marks: 17 FSD-I-29

Q.No.1 You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill the relevant circle in front of that question number on computerized answer sheet. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero marks in that question. Attempt as many questions as given in objective type question paper and leave other circles blank.

S.#	Questions	A	B	C	D
1	At high frequencies, a R-L-C series circuit behaves like:	R-C circuit	R-L circuit	Capacitive circuit	Parallel resonance circuit
2	At what frequency will an inductor of 1H have a reactance of 500Ω ?	500Hz	250Hz	350Hz	80Hz
3	The back motor effect in generators is in agreement with the law of conservation of:	Charge	Momentum	Energy	Mass
4	The turns ratio $\frac{N_s}{N_p}$ of a step-up transformer is:	Greater than 1	Less than 1	Equal to 1	Equal to zero
5	Lorentz force is given by:	$\vec{F} = q(\vec{v} \times \vec{B})$	$\vec{F} = q\vec{E} + q(\vec{v} \times \vec{B})$	$\vec{F} = q\vec{E}$	$\vec{F} = I(\vec{L} \times \vec{B})$
6	The SI unit of permeability of free space is:	Wb	Wbm^{-2}	WbA^{-1}m^{-1}	It has no unit
7	The charge carriers in electrolytes are:	Free electrons	Holes	Protons	Positive and negative ions
8	If time constant of R-C circuit is small, the capacitor is charged or discharged:	Rapidly	Slowly	Intermediately	At constant rate
9	When an insulating medium is placed between two charges, the Coulomb's force:	Increases	Decreases	Becomes double	Remains same
10	The half life of radon gas is:	1620 years	23.5 minutes	3.8 days	4.5×10^9 years
11	Which basic force of nature has only repulsive nature?	Weak nuclear force	Strong nuclear force	Gravitational force	Electric force
12	The radius of 3rd orbit in hydrogen atom is:	0.477 nm	0.053 nm	0.212 nm	0.159 nm
13	A black body is:	Ideal radiator	Ideal reflector	Poor absorber	Poor radiator
14	Position was discovered by:	De Broglie	Heisenberg	Compton	Anderson
15	The current flowing into the base of a transistor is 25 microA while its collector current is 5mA. The current gain of transistor will be:	2000	200	500	1000
16	The Boolean expression of OR gate is:	X = A+B	X = A·B	X = $\overline{A+B}$	X = $\overline{A·B}$
17	An example of donor impurity is:	Silicon	Germanium	Phosphorous	Aluminum

Objective
Paper Code
8472
Roll No. : _____

Intermediate Part Second
PHYSICS (Objective) GROUP - II
Time: 20 Minutes   Marks: 17   FSD-2-24

Q.No.1 You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill the relevant circle in front of that question number on computerized answer sheet. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero marks in that question. Attempt as many questions as given in objective type question paper and leave other circles blank.

S.#	Questions	A	B	C	D
1	A particle carrying a charge of 2e falls through a potential difference of 10V. The energy acquired by it is:	2eV	5eV	10eV	20eV
2	In a capacitor energy is stored in:	Electric field	Magnetic field	Gravitational field	Nuclear field
3	The charge carriers in electrolyte are:	Free electrons	Positive and negative ions	Free electrons and ions	Electrons and holes
4	Output waveform of sweep or time base generator is:	Saw tooth wave	Sinusoidal wave	Square wave	Digital wave
5	An alpha particle of charge 2e enters a uniform magnetic field of 0.1T with velocity $10ms^{-1}$ perpendicularly, the magnetic force acting on it will be:	1.6×10^{-19} N	3.2×10^{-19} N	6.4×10^{-19} N	Zero
6	Lenz's law is in accordance with the law of conservation of:	Charge	Mass	Momentum	Energy
7	Eddy currents are setup in a direction:	Parallel to flux	Antiparallel to flux	Perpendicular to flux	At an angle 45° to the flux
8	The unit of impedance is:	Ohm	Farad	Volt	$(Ohm)^{-1}$
9	The power factor in a series resonance circuit at resonance is:	0	1	−1	Infinity
10	The units of modulus of elasticity are the same as those of:	Stress	Strain	Power	Work done
11	In case of non-inverting operational amplifier, if $R_1 = \dfrac{R_2}{2}$, then:	$V_{out} = 2\, V_{in}$	$V_{in} = 2\, V_{out}$	$V_{out} = 3\, V_{in}$	$V_{in} = 3\, V_{out}$
12	$X = A \cdot \bar{B} + \bar{A} \cdot B$ is the mathematical mutation for:	NOR gate	NAND gate	XOR gate	XNOR gate
13	The slope of the maximum K.E of photoelectrons versus light frequency graph represents:	Momentum	Planck's constant	Maximum wavelength	Work function
14	The minimum energy required for pair production is:	0.51 MeV	1.51 MeV	1.02 MeV	0.051 MeV
15	The radius of second Bohr radius for hydrogen atom is:	0.053 nm	0.212 nm	0.106 nm	0.848 nm
16	The dead time for G.M counter is:	10^{-3}s	10^{-4}s	10^{-5}s	10^{-8}s
17	Unit of radioactivity is curie (Ci). Which is equal to _____ disintegration per second.	3.74×10^9	3.7×10^{10}	3.64×10^9	4.5×10^9

Roll No. : _____

Objective
Paper Code

8477

Intermediate Part Second - 103
PHYSICS (Objective) **GROUP - I**
Time: 20 Minutes   Marks: 17

☆ ☆
☆ ☆

Q.No.1 You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill the relevant circle in front of that question number on computerized answer sheet. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero marks in that question. Attempt as many questions as given in objective type question paper and leave other circles blank.coa

FBD-G1-22

S.#	Questions	A	B	C	D
1	If an iron core coil of reactance 628Ω is placed in series with 450Ω resistance in AC circuit. The phase difference will be:	51.5°	60°	30°	45°
2	Energy band theory based on:	Wave mechanical model	Bohr atomic model	Pauli exclusion principle	Electronic configuration of electrons
3	In transistor with common emitter configuration, output voltage is at phase difference of:	90°	100°	120°	180°
4	An electronic computer is vast arrangement of electronic switches which are made from:	Resistors	Inductors	Capacitors	Transistors
5	$\dfrac{h}{m_0 c}$ has the unit of:	Time	Distance	Velocity	Acceleration
6	An electron moving with speed of $1\times10^6\,ms^{-1}$ has wavelength:	$7\times10^{-10}\,m$	$7\times10^{-9}\,m$	$7\times10^{10}\,m$	$7\times10^{-8}\,m$
7	Velocity of electron of hydrogen in different orbits is:	Same	Quantized	Increase in higher orbits	Independent of orbit number
8	It is believed that quark cannot exist in:	Free state	Bound state	Quark antiquark combination	Three quark combination
9	Ultra violet radiation cause:	Healthy growth	Saver crop damage	Fast hair grow	Formation of ozone
10	Joule per Coulomb is equal to:	Second	Newton	Watt	Volt
11	Gravitational force cannot be:	Mass dependent	Distance dependent	Shielded	Stronger than electric force
12	In carbon resistance, colour bands are red, red, red and silver. The numerical value of resistance will be:	2200Ω±10%	220Ω±5%	22000Ω±20%	22Ω±10%
13	The torque on a current carrying rectangular coil placed outside the magnetic field will be:	Maximum	NIAB	Zero	IA cos θ
14	Sensitivity of moving coil galvanometer can be increased by:	Decreasing area of coil	Decreasing number of turns	Using thick suspension wire	Increasing magnetic field
15	When motor is just started, the current passing through the coil will be:	Large	Small	Zero	Average
16	The windings of electromagnet in DC motor are called:	Solenoids	Field coils	Inductors	Loops
17	When 10V is applied to an AC circuit with current of 10mA then impedance will be:	100Ω	10Ω	1000Ω	0.1Ω

Objective
Paper Code
8474

Intermediate Part Second - 103
PHYSICS (Objective) **GROUP - II**
Time: 20 Minutes   Marks: 17

☆
☆ FBD-G2-22

Q.No.1
You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill the relevant circle in front of that question number on computerized answer sheet. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero marks in that question. Attempt as many questions as given in objective type question paper and leave other circles blank.coa

S.#	Questions	A	B	C	D
1	The energy released by fusion of two deuterons into a helium nucleus is about:	24 MeV	200 MeV	1.02 MeV	7.2 MeV
2	One Joule of energy absorbed in a body per kg is equal to:	1 rad	1 rem	Sievert	Gray
3	Paschan series is obtained when all the transitions of electron terminate on:	2nd orbit	3rd orbit	4th orbit	5th orbit
4	Platinum wire becomes yellow at room temperature of:	900°C	1300°C	1600°C	500°C,
5	If object moves with the speed of light, its mass become:	Zero	Small	Same	Infinity
6	The thickness of a base in a transistor is of the order of:	10^{-3} m	10^{-4} m	10^{-6} m	10^{2} m
7	$X = \overline{A \cdot B}$ is the mathematical notation for:	NAND gate	NOR gate	OR gate	AND gate
8	The critical temperature for mercury is:	7.2K	4.2K	1.18K	3.7K
9	Resistance of choke is:	Zero	Very small	Large	Infinite
10	In three phase, voltage across any two lines is:	220V	230V	400V	430V
11	In DC generator, split rings acts as:	Capacitor	Commutator	Inductor	Resistor
12	Energy stored in the inductor is:	$\frac{1}{2}L^2 I$	$\frac{1}{2}LI$	$\frac{1}{2}LI^2$	$\frac{1}{2}L^2 I^2$
13	A galvanometer becomes more sensitive when the factor $\frac{C}{BAN}$ will be:	Large	Small	Constant	Zero
14	Force on a moving charge in a uniform magnetic field will be maximum, when the angle between $\vec{V}$ and $\vec{B}$ is:	0°	30°	60°	90°
15	Kirchhoff's first rule is based on conservation of:	Energy	Voltage	Charge	Mass
16	Coulomb per volt is called:	Farad	Ampere	Joule	Ohm
17	If the distance between two point charges is halved. the electric force becomes:	Half	Double	¼ times	4 times

Objective
Paper Code
8471

Intermediate Part Second **FBD-41-21** Roll No. : _____

PHYSICS (Objective) GROUP - I
Time: 20 Minutes   Marks: 17

Q.No.1 You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill the relevant circle in front of that question number on computerized answer sheet. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero marks in that question. Attempt as many questions as given in objective type question paper and leave other circles blank.

S.#	Questions	A	B	C	D
1	Electrical field intensity between two oppositely charged parallel plates is:	$\frac{2\sigma}{\varepsilon_0}$	$\frac{\sigma}{\varepsilon_0}$	$\frac{\sigma}{2\varepsilon_0}$	$\frac{\varepsilon_0}{\sigma}$
2	When a dielectric material is inserted between the plates of a capacitor, the potential difference between the plates:	Does not change	Increases	Decreases	Increases then decreases
3	Kirchhoff's first rule is based on law of conservation of:	Mass	Momentum	Energy	Charge
4	Magnetic field strength is measured in terms of:	Wbm^{-2}	Wb	NmA^{-1}	Js
5	In CRO the output waveform of time base generator is:	A ripple	Square wave	Sinusoidal	Saw tooth
6	Mutual inductance of two coils does not depend on:	Number of turns of the coils	Area of cross-section of coils	Density of material of coils	Nature of the core material
7	If the magnetic field intensity is doubled then magnetic energy density becomes:	Four times	Double	Half	Eight times
8	Direct current cannot flow through:	Resistor	Capacitor	Inductor	Ammeter
9	In RLC series circuit, the condition for resonance is:	$X_C > X_L$	$X_C = X_L$	$X_C < X_L$	$X_L = Z$
10	Dimensions of strain are same as that of:	Stress	Pressure	Young's modulus	Relative permittivity
11	Forward resistance of the p-n junction is:	Very large	Of the order of $k\Omega$	A few Ohms	In mega Ohms
12	In a transistor greater concentration of impurity is added in:	Emitter	Collector	Both emitter and collector	Base
13	Value of Plank's constant is:	$6.34 \times 10^{-43} Js$	$6.43 \times 10^{-34} Js$	$6.64 \times 10^{-19} Js$	$6.63 \times 10^{-34} Js$
14	A gamma radiation has an energy of the order of:	1 MeV	1 keV	100 eV	1 eV
15	Rydberg constant is given in units of:	kg^{-1}	m^{-1}	s^{-1}	Js
16	In a nuclear transmutation, radium changes into radon, the emitted particle is:	A neutron	A proton	An alpha particle	A beta particle
17	The average number of neutrons produced per fission of uranium-235 atom is:	2.5	3	2	4

Objective
Paper Code
8472

Intermediate Part Second FBO-42-21 ☆ Roll No. : _____

PHYSICS (Objective) **GROUP - II**
Time: 20 Minutes   Marks: 17

You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill the
Q.No.1 relevant circle in front of that question number on computerized answer sheet. Use marker or pen to fill the circles.
Cutting or filling two or more circles will result in zero marks in that question. Attempt as many questions as given in
objective type question paper and leave other circles blank.

S.#	Questions	A	B	C	D
1	A particle of mass m and charge q is released from rest in a uniform electric field E. The K.E. attained by the particle after moving a distance 'd' is:	$\frac{Ed}{q}$	qE^2d	qEd	$\frac{qE}{d^2}$
2	The energy stored in the capacitor is:	K.E.	P.E.	Electrical K.E.	Electrical P.E.
3	On increasing the length of wire specific resistance of the wire:	Increases	Decreases	Remains unchanged	First increase then decrease
4	An electron is moving in a circle of radius 'r' in a uniform magnetic field, suddenly the field is reduced to B/2, the radius of circle now becomes:	$\frac{r}{2}$	$\frac{r}{4}$	2 r	4 r
5	Force on current carrying conductor per unit length is given by:	ILB sin θ	ILB	IB	IB sin θ
6	The current flowing through a coil due to induced emf in it depends upon:	Shape of the coil	Resistance of the coil	Area of the coil	Magnetic flux
7	The induced emf primarily produced at the cost of:	Internal energy	Chemical energy	Electrical energy	Mechanical energy
8	At low frequency the current through a capacitor of A.C. circuit will be:	Large	Small	Zero	Infinite
9	The inductance and capacitance behave a function of:	Voltage	Frequency	Time	Current
10	Impurity atoms are doped in semi-conductor to increase:	Free electrons	Holes	Conductivity	Resistivity
11	The specially designed semi-conductor diode used as indicator lamp in electronic circuit are:	The switch	Solar cells	Photodiodes	Light emitting diode
12	Which diode is used for detection of light?	Light emitting diode	Photo diode	Photo voltaic cell	All these
13	Rest mass of photon is:	Zero	Infinity	$\frac{hf}{e}$	$\frac{hc}{\lambda}$
14	Threshold wavelength for metal having work function ϕ_o is λ_o. What is threshold wavelength for metal having work function $2\phi_o$ is?	$\frac{\lambda}{2}$	4λ	2λ	$\frac{\lambda}{4}$
15	Production of X-rays can be regarded as inverse of:	Compton effect	Photoelectric effect	Annihilation of matter	Pair production
16	The energy released per unit mass is greater in:	Fission reaction	Fusion reaction	Chemical reaction	Nuclear reaction
17	Energy needed to create an electron-hole pair in a solid state detector is:	2 - 3 eV	3 - 4 eV	4 - 5 eV	5 - 6 eV

PBD-12-18

Roll No. : _____

Objective
Paper Code
8471

Intermediate Part Second   (New Scheme)
PHYSICS   (Objective)
Time: 20 Minutes   Marks: 17

Q.No.1   You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill the relevant circle in front of that question number on computerized answer sheet. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero marks in that question. Attempt as many questions as given in objective type question paper and leave other circles blank.

S.#	Questions	A	B	C	D
1	The capacitance of capacitor depends upon:	Thickness of plates	Charges on the plates	Voltage applied	Geometry of the capacitor
2	A billion electrons are added to pith ball. Its charge is:	-1.6×10^{-10}C	-1.6×10^{-12}C	-1.6×10^{-14}C	-1.6×10^{-7}C
3	The current through a resistance of 100Ω when connected across a source of 220V is:	22000A	22A	2.2A	0.45A
4	A current carrying conductor is placed in uniform magnetic field parallel to it. The magnetic force experienced by the conductor is:	F = ILB	F = ILB sinθ	F = ILB cosθ	F is zero
5	Cathode ray oscilloscope works by deflecting a beam of:	Electrons	Protons	Neutrons	Positrons
6	The only difference between the construction of DC and AC generator is:	Carbon brushes	coil	Commutator	Magnetic field
7	If the coil is wound on iron core, the flux through it:	Decreases	Becomes zero	Increases	Remains constant
8	During each cycle, alternating voltage reaches to peak value:	Once	Twice	Thrice	Four times
9	The device which allows only the continuous flow of AC through it is:	Capacitor	Inductor	Battery	Thermistor
10	A vacant or partially filled band is called:	Fermi band	Valence band	Forbidden band	Conduction band
11	A device which is used for the conversion of AC into DC is called:	Oscillator	Detector	Amplifier	Rectifier
12	Which one is not fundamental logic gate?	OR gate	AND gate	NOT gate	NAND gate
13	The unit of Plank's constant is:	Joule	Joule-S	Watt	Candela
14	Which one is low energy photon?	Visible light	Infrared light	Ultra violet light	X-rays
15	Radiation produced from TV picture tube is:	Gamma rays	X-rays	Infrared light	Ultra violet light
16	The bombardment of nitrogen with α-particle will produce:	Neutron	Proton	Electron	Positron
17	The quantity called the absorbed dose "D" is:	E/m	E/C	m/C	C/E

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

1. 1. Which of the following circuit is called electrical oscillator?
   (A) R.L circuit   (B) R.C circuit   (C) R.L.C circuit   (D) L.C circuit

2. A charged particle enters in a strong magnetic field, then its K.E
   (A) remains constant   (B) increases
   (C) decreases   (D) first increases then decreases

3. Turn ratio of a transformer is 50. If 220 volt A.C is applied to its primary coil, voltage in the secondary coil will be
   (A) 440 V   (B) 4.4 V   (C) 220 V   (D) 11000 V

4. The physical quantity related to photon, that does not change in Compton scattering is
   (A) energy   (B) speed   (C) frequency   (D) wavelength

5. In photoelectric effect, the number of photoelectrons depends upon
   (A) wavelength of light   (B) intensity of light
   (C) threshold frequency   (D) work function

6. Glass is also known as
   (A) solid   (B) liquid   (C) solid liquid   (D) gas

7. The unit of electric intensity other than NC^{-1} is
   (A) V/A   (B) V/m   (C) V/C   (D) N/V

8. The unit of $\vec{E}$ is NC^{-1} and that of $\vec{B}$ is $NA^{-1}m^{-1}$ then the unit of E/B is
   (A) ms^{-2} (B) ms   (C) $m^{-1}s^{-1}$ (D) ms^{-1}

9. The binding energy per nucleon is maximum for
   (A) Helium   (B) Iron   (C) Polonium   (D) Radium

10. For holography, we use a beam of
    (A) r – rays   (B) x – rays   (C) β – rays   (D) Laser

11. The colour of light emitted by LED depends on
    (A) its forward biasing   (B) the reverse biasing
    (C) amount of forward current   (D) type of semi-conductor material used

12. When current flowing through an inductor is doubled, the energy stored in it becomes
    (A) half   (B) four times   (C) one fourth   (D) double

13. The half-life of Radon gas is
    (A) 3.8 days   (B) 38 days   (C) 3.8 months   (D) 38 months

14. An ideal voltmeter would have
    (A) zero resistance   (B) high resistance   (C) infinite resistance   (D) low resistance

15. A parallel plate capacitor with oil having $\varepsilon_r = 2$ has a capacitance C. If the oil is removed between the plates, then capacitance of capacitor becomes
    (A) C   (B) C/2   (C) $C/\sqrt{2}$ (D) 2C

16. The voltage gain of an amplifier having $r_{ie} = 1\,\Omega$, $\beta = 100$ and $R_c = 20\,\Omega$ is
    (A) 2000   (B) 1000   (C) 500   (D) 5

17. When we accelerate the charge, which type of waves are produced?
    (A) Mechanical waves   (B) Travelling waves
    (C) Stationary waves   (D) Electromagnetic waves

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

1. 1. Using spectroscopy the helium was identified in the
   (A) Earth   (B) Sun   (C) Stars   (D) all of these

2. The induced emf is primarily produced at the cost of
   (A) internal energy   (B) mechanical energy   (C) chemical energy   (D) electrical energy

3. The reactance of an inductor at 50Hz is 10Ω. Its reactance at 100Hz is
   (A) $2.5\ \Omega$ (B) $5\ \Omega$ (C) $10\ \Omega$ (D) $20\ \Omega$

4. Threshold wavelength for metal having work function 40 is λ_o. What is the threshold wavelength for metal having work function 240 is
   (A) 2λ (B) 4λ (C) $\lambda/2$ (D) $\lambda/4$

5. The emf induced in 1mH inductor in which current changes from 5A to 3A in 1s is
   (A) 2×10^{-6}V   (B) 8×10^{-6}V   (C) 2V   (D) 8V

6. Two metallic spheres of radius 1cm and 2cm get equal quantity of charge. Which has greater surface charge density?
   (A) 1st sphere   (B) 2nd sphere   (C) both get equal surface   (D) none of these

7. The voltage gain of an amplifier having $r_{ie} = 1\Omega$, $\beta = 100$, $R_c = 20\ \Omega$ is
   (A) 2000   (B) 1000   (C) 500   (D) 5

8. If the length of conductor is doubled and its cross sectional area is halved, its conductance will be
   (A) increased four times   (B) become one fourth
   (C) become one-half   (D) remained un-changed

9. The capacity of condenser is 4×10^{-6} Farad and its potential is 100 Volt. The energy released on discharging it fully will be
   (A) 0.02 J   (B) 0.04 J   (C) 0.025 J   (D) 0.05 J

10. Circulation of blood can be studied by
    (A) Sodium – 24   (B) Strontium – 90   (C) Carbon – 14   (D) Iodine – 131

11. If a wire is stretched to double of its length then strain will be
    (A) zero   (B) 1   (C) 1/2   (D) double

12. Unit of decay constant λ is
    (A) ms   (B) m^{-1} (C) m   (D) s^{-1}

13. The term transistor stands for
    (A) transfer of resistance   (B) transfer of voltage
    (C) transfer of current   (D) all of these

14. Force on a current carrying conductor per unit length is given by
    (A) IL Sinθ   (B) ILB   (C) IB   (D) IB Sinθ

15. For a current carrying solenoid the term "n" has unit as
    (A) no unit   (B) m   (C) m^{-1} (D) m^{-2}

16. When applied potential difference is increased; capacitance of parallel plate capacitor
    (A) increases   (B) decreases   (C) remains same   (D) reduces to zero

17. In photoelectric effect the intensity of light made twice than initial value. The maximum K.E of photoelectron becomes
    (A) same   (B) double   (C) half   (D) four times

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

Gruj-12-1-23

1. 1. The orbital electron has
   (A) fixed energy
   (B) 3.4 ev energy
   (C) any amount of energy
   (D) infinite energy

2. The circuit used for smoothing the pulsating voltage is called
   (A) resistor
   (B) filter
   (C) rectifier
   (D) grid

3. In reaction $_1^2H + _1^3H \rightarrow _2^4He + X + 17.6\,MeV$, X will be
   (A) proton
   (B) electron
   (C) neutron
   (D) α particle

4. In reverse biased PN junction, its resistance is
   (A) several mega ohms
   (B) zero
   (C) infinite
   (D) few ohms

5. The radiations which are not deflected by magnetic field are
   (A) β-rays
   (B) α-rays
   (C) γ-rays
   (D) cathode rays

6. Addition of impurity of 3rd group in the semiconductor causes the production of
   (A) holes
   (B) protons
   (C) electrons
   (D) positron

7. The materialization of energy takes place in the process of
   (A) Photoelectric effect
   (B) Compton's effect
   (C) Pair production
   (D) Pair annihilation

8. Work done by magnetic force is
   (A) FdCosθ
   (B) positive
   (C) negative
   (D) zero

9. The factor $\dfrac{h}{m_o c^2}$ has the unit of
   (A) second square
   (B) second
   (C) J.S.
   (D) JS^{-1}

10. By increasing the length of current carrying solenoid, the magnetic field will
    (A) increase
    (B) decrease
    (C) not change
    (D) be uniform

11. At high frequency, the current in pure inductor is
    (A) low
    (B) high
    (C) moderate
    (D) zero

12. Semiconductor diode is an example of
    (A) super conductor
    (B) ohmic device
    (C) non ohmic device
    (D) ferromagnetic

13. If the frequency of A.C. is doubled then capacitive reactance will be
    (A) half
    (B) two times
    (C) four times
    (D) one fourth

14. $\dfrac{\Delta v}{\Delta r}$ has the unit of
    (A) electric flux
    (B) magnetic flux
    (C) magnetic field
    (D) electric field

15. The windings of electromagnetic in generator are called
    (A) primary coils
    (B) field coils
    (C) secondary coils
    (D) inductors

16. Gaussian surface should be
    (A) spherical
    (B) cubical
    (C) circular
    (D) close

17. The expression for energy stored in an inductor is
    (A) $\dfrac{1}{2}L^2I$
    (B) L^2I
    (C) $\dfrac{1}{2}LI^2$
    (D) LI^2

314-(II)-1stA 423-34000

PHYSICS　　Intermediate Part-II , Class 12th (1stA 423 - II)　Paper: II　Group – II

Time: 20 Minutes　　　　　OBJECTIVE ..... Code: 8474 *Guj'-12-2-23* Marks: 17

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

1.
1. Most penetrating among the followings are
   (A) Alpha rays　　(B) Beta rays　　(C) Neutrons　　(D) Gamma rays

2. Switching time of a photo diode is in
   (A) 10^{-9} s　　(B) 10^{-4} s　　(C) 10^{-6} s　　(D) 10^{-15} s

3. Most stable isotope among the followings is
   (A) Fe^{58}　　(B) U^{235}　　(C) Pu^{239}　　(D) Pb^{82}

4. The diode in a half wave rectifier conducts for _____ during a complete AC cycle.
   (A) 90^{0}　　(B) 180^{0}　　(C) 360^{0}　　(D) 45^{0}

5. For lyman series, longest wavelength is emitted when n =_____
   (A) 1　　(B) 2　　(C) ∞　　(D) 5

6. Highest occupied band in solids is _____ band.
   (A) conduction　　(B) forbidden　　(C) core　　(D) valence

7. Wavelength of radiations emitted from a thermal object depends only on
   (A) temperature　　(B) colour of surface　　(C) size of surface　　(D) nature of surface

8. When plane of coil is placed parallel to magnetic field, torque on it is
   (A) zero　　(B) maximum　　(C) intermediate　　(D) infinite

9. No inertial frame of reference is preferred over another inertial frame
   (A) false　　　　　　　　(B) true
   (C) true for static frames　　(D) true for dynamic frames

10. When a solenoid containing steady current is gently pressed, magnetic field inside it,
    (A) increases　　(B) decreases　　(C) vanishes　　(D) remains same

11. _____ charges produce electromagnetic waves.
    (A) static　　(B) steadily moving　　(C) heavy　　(D) oscillating

12. Velocity of free electrons in metals at room temperature is of the order of
    (A) 10^{5} m/s　　(B) 10^{8} m/s　　(C) 10^{3} m/s　　(D) 10^{-3} m/s

13. In a capacitor, voltage _____ current by _____ .
    (A) lags, π　　(B) leads, $\pi/2$　　(C) lags, $\pi/2$　　(D) leads, π

14. Inside a charged metallic box, electric field intensity is
    (A) zero　　(B) strong　　(C) weak　　(D) variable

15. _____ uses a transformer with many secondary coils
    (A) TV receiver　　(B) door bell　　(C) Transistor radio　　(D) AC generator

16. When applied potential difference is increased; capacitance of parallel plate capacitor
    (A) increases　　(B) decreases　　(C) remains same　　(D) reduces to zero

17. Average output power of an AC generator for resistive load is _____ if peak current and voltage are I_{o} & V_{o} respectively
    (A) $V_{o}I_{o}$　　(B) $\dfrac{V_{o}I_{o}}{2}$　　(C) zero　　(D) $2V_{o}I_{o}$

PHYSICS (Intermediate Part-II , Class 12th) 422 - (II) Paper II (Group – II)

Time: 20 Minutes OBJECTIVE ..... Code: 8474 **Guj-Gr-22** Marks: 17

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave others blank.

1. 1. Which of the following electromagnetic waves have the shortest wavelength?
    (A) radio waves (B) infrared waves (C) ultraviolet waves (D) micro waves

2. Automatic function of street lights can be done by _____ .
    (A) inductor (B) comparator (C) transistor (D) capacitor

3. A two input NAND gate with input 'A' and 'B' has output zero if _____ .
    (A) B is zero (B) A is zero
    (C) both A and B inputs are zero (D) both inputs A and B are one

4. The shortest wavelength in Lyman series is _____ .
    (A) $\frac{2}{3}R_H$ (B) $\frac{4}{9}R_H$ (C) $\frac{1}{R_H}$ (D) R_H

5. The potential difference between two plates is 100 volts and separation of the plates 5 cm then potential gradient is _____ .
    (A) $2000\,NC^{-1}$ (B) $20\,NC^{-1}$ (C) $5000\,NC^{-1}$ (D) $2\,NC^{-1}$

6. If the temperature of the black body is doubled then energy radiated per second per unit area becomes.
    (A) 32 times (B) 16 times (C) 64 times (D) 4 times

7. In radiation therapy, the thyroid cancer treatment is done with _____ .
    (A) sodium – 24 (B) iodine – 131 (C) carbon – 14 (D) cobalt – 60

8. A direct current of 5 ampere is given to primary coil, then the voltage developed across secondary coil is _____ .
    (A) 5 volts (B) zero (C) 10 volts (D) 2 volts

9. A battery moves a charge of 400 C in a circuit in time 50 seconds. The current will be _____ .
    (A) 2 A (B) 8 A (C) 20 A (D) 200 A

10. Which of the following is not needed in fast nuclear reactor?
    (A) moderator (B) control rods (C) turbine (D) heat exchanger

11. Which of the following is not present in A.C generator?
    (A) split rings (B) carbon brushes (C) magnetic field (D) armature

12. Which of the following is not accurate measuring device?
    (A) digital multimeter (B) cathode rays oscilloscope (C) voltmeter (D) potentiometer

13. A one farad capacitor is charged to 100 V and then discharge through 1 KΩ resistance the total energy dissipated through resistor is _____ .
    (A) 5 KJ (B) 10 KJ (C) 2 KJ (D) 100 KJ

14. The length contraction happens only _____ .
    (A) perpendicular to direction of motion (B) along the direction of motion
    (C) opposite to direction of motion (D) along any direction

15. In RLC series circuit, at resonance frequency, the impedance is _____ .
    (A) zero (B) minimum (C) maximum (D) infinite

16. Which one of the following is not semiconductor?
    (A) germanium (B) silicon (C) aluminium (D gallium arsenide

17. The magnetic force on an electron moving with speed 10^6 m/sec perpendicular to the magnetic field of strength 1 web m^{-2} is _____ .
    (A) $1.6 \times 10^{-19}\,N$ (B) $1.6 \times 10^{-13}\,N$ (C) zero (D) $1.6 \times 10^{-23}\,N$

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave others blank.

1.

1. To construct a step down transformer _____ .

   (A) $N_S > N_P$ (B) $N_S = N_P$ (C) $N_S < N_P$ (D) $N_S = 10 N_P$

2. The inputs of NAND gate are '1' and '0'. Its output will be _____ .

   (A) 0   (B) 2   (C) 0.5   (D) 1

3. SI unit of current amplification factor ' β ' is _____ .

   (A) ampere   (B) AS^{-1} (C) no unit   (D) CS^{-1}

4. Lyman series lies in the _____ .

   (A) ultraviolet region   (B) visible region   (C) infrared region   (D) far-infrared region

5. Practical application of electrostatic force is in _____ .

   (A) laser   (B) x-ray production   (C) inkjet printer   (D) A.C generator

6. Which of the following has the greatest frequency?

   (A) radio wave   (B) gamma-ray   (C) x-ray   (D) red light

7. Two down and one up quark make _____ .

   (A) neutron   (B) photon   (C) positron   (D) proton

8. The unit of magnetic flux density is _____ .

   (A) $Wb\ m^{-2}$ (B) $Nm^{-1}A^{-1}$ (C) tesla   (D) all of these

9. Magnitude of drift velocity is of the order of _____ .

   (A) $10^{-6} mS^{-1}$ (B) $10^{6} mS^{-1}$ (C) $10^{3} mS^{-1}$ (D) $10^{-3} mS^{-1}$

10. The half life of radon gas is _____ .

   (A) 4.5×10^{9} years   (B) 30.1 years   (C) 3.8 days   (D) 23.5 minutes

11. The device which allows only the continuous flow of A.C through it is _____ .

   (A) capacitor   (B) inductor   (C) thermistor   (D) all of these

12. A cell is used in _____ .

   (A) ohmmeter   (B) ammeter   (C) galvanometer   (D) voltmeter

13. A charge of four coulombs is in the electric field intensity of 4 N/C. The force on the charge is _____ .

   (A) 8 N   (B) 16 N   (C) 1 N   (D) zero

14. Which one is low energy photon?

   (A) x-ray   (B) infrared light   (C) ultraviolet light   (D) visible light

15. The peak value of A.C source is 20 A, then its rms value will be _____ .

   (A) 10 A   (B) 14.1 A   (C) 20 A   (D) 28.2 A

16. If a body regains completely its altered shape and size , it is said to be _____ .

   (A) plastic   (B) brittle   (C) elastic   (D) all of these

17. The magnetic field of solenoid is quite similar to that of _____ .

   (A) straight conductor   (B) single wire loop   (C) a bar magnet   (D) all of these

Roll No. of Candidate: _____

Physics (New Scheme)   (INTER PART-II) 419-(I)   Group: I   Paper: II
Time: 20 Minutes   OBJECTIVE   Marks: 17
                       Code: 8471

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave other blank.

1. Due to polarization, electric field E in a capacitor:
   (A) increases   (B) decreases
   (C) first increases then decreases   (D) remains same

2. If time constant in RC circuit is small, then capacitor is charged or discharged:
   (A) slowly   (B) rapidly   (C) at constant rate   (D) intermittently

3. Kirchhoff's second rule is based on:
   (A) law of conservation of energy   (B) law of conservation of mass
   (C) law of conservation of charge   (D) law of conservation of momentum

4. S.I unit of magnetic permeability is:
   (A) Wb $A^{-1}m^{-1}$ (B) Wb m^2 (C) Wb mA^{-1} (D) Wb Am^{-1}

5. When ohmmeter gives full scale deflection, it indicates,
   (A) zero resistance   (B) infinite resistance   (C) small resistance   (D) very high resistance

6. Lenz's law deals with the:
   (A) magnitude of induced current   (B) direction of induced emf
   (C) direction of induced current   (D) magnitude of induced emf

7. When current flowing through an inductor is doubled, then energy stored in it becomes:
   (A) half   (B) four times   (C) one fourth   (D) double

8. In a capacitive circuit of A.C quantity, when $q = 0$, the slope of $q - t$ curve is:
   (A) minimum   (B) maximum   (C) zero   (D) negative

9. When A.C passes through an inductor, voltage leads the current by an angle:
   (A) $0°$ (B) $45°$ (C) $90°$ (D) $180°$

10. In extrinsic semi-conductors, doping is of the order of:
    (A) 1 atom to 10^4 (B) 1 atom to 10^8 (C) 1 atom to 10^{16} (D) 1 atom to 10^6

11. The Boolean equation for exclusive NOR gate is given by:
    (A) $X = A.B + B.A$ (B) $X = \overline{A.\overline{B} + \overline{B}.A}$ (C) $X = \overline{A.\overline{B} + \overline{A}.B}$ (D) $X = A.\overline{B} + \overline{B}.A$

12. The potential barrier for silicon at room-temperature is
    (A) 0.7 volt   (B) 0.5 volt   (C) 0.3 volt   (D) 0.9 volt

13. The unit of work function is:
    (A) volt   (B) joule   (C) watt   (D) farad

14. An electron in H-atom is excited from ground state to $n = 4$, how many spectral lines are possible in this case?
    (A) 3   (B) 4   (C) 5   (D) 6

15. Metastable state is _____ than normal excited state.
    (A) 10^{-5} times larger   (B) 10^{-8} times smaller   (C) 10^{-3} times smaller   (D) 10^5 times larger

16. A pair of quark and antiquark make a:
    (A) meson   (B) hadron   (C) lepton   (D) baryon

17. The force which is responsible for the breaking up of the radioactive elements is:
    (A) strong nuclear force   (B) gravitational force
    (C) electromagnetic force   (D) weak nuclear force

Physics (New Scheme)   (INTER PART-II) 419-(I)   Group: II   Paper: II
Time: 20 Minutes   OBJECTIVE   Marks: 17
Code: 8472

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave other blank.

1.

1. Selenium is a
    A) conductor   B) insulator   C) photoconductor   D) semi-conductor

2. The electron volt (eV) is the unit of
    A) electric current   B) electric energy   C) electric potential   D) electric flux

3. The drift velocity of electrons is of the order of
    A) $10^{-2}\,m/s$ B) $10^{-3}\,m/s$ $10^{3}\,m/s$ D) $10^{6}\,m/s$

4. If a charge is at rest in a magnetic field then the force on charge is
    A) $q(\vec{V} \times \vec{B})$ B) $q\,V\,B\sin\theta$ C) $q\,V\,B$ D) zero

5. The SI unit of magnetic induction is
    A) weber   B) henry   C) tesla   D) guass

6. Emf is induced due to change in
    A) electric flux   B) magnetic flux   C) electric potential   D) electric current

7. Mutual induction has a practical role in the performance of the
    A) motor   B) generator   C) choke   D) transformer

8. In RLC series circuit, the current at resonance frequency is
    A) minimum   B) maximum   C) zero   D) infinite

9. At high frequency, the value of reactance of capacitor will be
    A) large   B) small   C) zero   D) infinite

10. Which one of the following is a polymeric solid
    A) glass   B) nylon   C) copper   D) zinc

11. In P-type substances, the minority charge carriers are
    A) holes   B) protons   electrons   D) neutrons

12. The output resistance of an operational amplifier is
    A) high   B) low   C) zero   D) equal to input resistance

13. Wave nature of light appears in
    A) pair production   B) compton effect   C) photoelectric effect   D) interference

14. The unit of Plank's constant is
    A) Volt   B) JS   C) JS^{-1} D) eV

15. Balmer series lies in the region of electromagnetic spectrum
    A) infra-red   B) visible   C) ultraviolet   D) far infrared

16. The S.I unit of radiation dose is
    A) roentgen   B) curie   C) grey   D) rem

17. The binding energy per nucleon is maximum for
    A) uranium   B) platinum   C) hydrogen   D) iron

318-(I)-419-25000

Q.No.1 You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that bubble in front of that question number, on bubble sheet. Use marker or pen to fill the bubbles. Cutting or filling two or more bubbles will result in zero mark in that question.

S.#	QUESTIONS	A	B	C	D
1	Half life of uranium–239 is:	24.5 min	25.5 min	23.5 min	26.5 min
2	The building blocks of protons and neutrons are called:	Positron	Quarks	Electron	Neutron
3	If the medium between the charges is not free space, then electrostatic force will:	Increase	Decrease	Remains constant	Infinite
4	Negative sign in equation $E = -\dfrac{\Delta V}{\Delta r}$ shows:	Decreasing potential	Increasing potential	Increasing strength	Magnitude
5	Reciprocal of resistivity is called:	Inductance	Conductance	Conductivity	Resistance
6	A charged particle enters in a strong magnetic field its K.E:	Increases	Infinite	Decreases	Remains same
7	When a charged particle is projected perpendicular to a uniform magnetic field, its path is:	Helix	Circular	Spiral	Ellipse
8	If the angular frequency of A.C generator is doubled, the time period will be:	Doubled	Four times	Half	One fourth
9	Split ring are used in:	D.C motor	Transformer	A.C generator	A.C motor
10	Root mean square value of voltage is:	$\sqrt{2}V_o$	$\dfrac{V_o}{2}$	$\dfrac{V_o}{\sqrt{2}}$	$2V_o$
11	The phase of A.C at positive peak from origin is:	$\dfrac{\pi}{4}$	$\dfrac{\pi}{2}$	$\dfrac{3\pi}{2}$	π
12	Which is pentavalent impurity?	Gallium	Boron	Indium	Antimony
13	Which component of the transistor has lowest concentration of impurity?	Base	Emitter	Collector	Resistor
14	Bolean expression for AND gate is:	$X = A + B$	$X = \overline{A \cdot B}$	$X = A \cdot B$	$X = \overline{A + B}$
15	Compton shift for wavelength is minimum for scattering angle $\theta =$	90°	0°	45°	270°
16	At higher energies more then 1.02 MeV the dominant process is:	Compton effect	Photoelectric effect	Fission process	Pair production
17	Electron normally can reside in excited state for about:	$10^{-8}\,s$	$10^{-3}\,s$	$10^{-6}\,s$	$10^{8}\,s$

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that bubble in front of that question number, on bubble sheet. Use marker or pen to fill the bubbles. Cutting or filling two or more bubbles will result in zero mark in that question. No credit will be awarded in case BUBBLES are not filled. Do not solve question on this sheet of OBJECTIVE PAPER.

Q.No.1

(1) $\dfrac{sec}{ohm}$ is equal to:

    (A) Coulomb   (B) Farad   (C) Joule   (D) Ampere

(2) S.I unit of electric flux is:

    (A) NC^{-1} (B) Nm^2C^{-1} (C) NmC^{-1} (D) NmC^2

(3) A thermistor is a heat sensitive:

    (A) Resistor   (B) Capacitor   (C) Inductor   (D) Diode

(4) S.I unit of magnetic flux density is:

    (A) $Wb\,m$ (B) $Wb\,m^{-1}$ (C) $Wb\,m^{-2}$ (D) $Wb\,m^{-3}$

(5) If 300 turns of wire are wound on $30cm$ length, then number of turns per unit length is:

    (A) 10   (B) 20   (C) 100   (D) 1000

(6) The principle of A.C generator is:

    (A) Mutual induction   (B) Self induction   (C) Electromagnetic induction   (D) All of these

(7) Energy density in inductor is given by:

    (A) $\dfrac{1}{2}\dfrac{B}{\mu_0}$ (B) $\dfrac{1}{2}\dfrac{B}{\mu_0^2}$ (C) $\dfrac{1}{2}\dfrac{B^2}{\mu_0^2}$ (D) $\dfrac{1}{2}\dfrac{B^2}{\mu_0}$

(8) The device which allows only the flow of D.C is:

    (A) Capacitor   (B) Resistor   (C) Inductor   (D) Generator

(9) In R.L.C series circuit resonance occurs when:

    (A) $X_C > X_L$ (B) $X_L > X_C$ (C) $X_L >> X_C$ (D) $X_L = X_C$

(10) The Curie temperature for iron is:

    (A) 923 K (B) 1023 K (C) 823 K (D) 723 K

(11) For non-inverting amplifier, if $R_1 = \infty\,ohm$, $R_2 = 0\,ohm$ then gain of amplifier is:

    (A) 2   (B) 0   (C) 1   (D) Infinite

(12) The current gain "β" of a transistor is given by:

    (A) $\dfrac{I_C}{I_B}$ (B) $\dfrac{I_E}{I_C}$ (C) $\dfrac{I_B}{I_C}$ (D) $\dfrac{I_E}{I_B}$

(13) The rest mass of X − ray photon is:

    (A) $1.6 \times 10^{-19}\,kg$ (B) $9.1 \times 10^{-31}\,kg$ (C) $1.67 \times 10^{-27}\,kg$ (D) Zero

(14) When platinum wire is heated, it becomes white at temperature:

    (A) $900^\circ C$ (B) $1100^\circ C$ (C) $1300^\circ C$ (D) $1600^\circ C$

(15) The value of Rydberg constant is:

    (A) $1.0974 \times 10^7\,m^{-1}$ (B) $1.0974 \times 10^{-7}\,m^{-1}$ (C) $1.0974 \times 10^{11}\,m^{-1}$ (D) $1.0974 \times 10^{-11}\,m^{-1}$

(16) When γ − rays are emitted, the nuclear mass of an element:

    (A) Increases by 2 units   (B) Increases by 1 unit   (C) Decreases by 4 units   (D) Does not change

(17) The particles equal in mass or greater than proton are:

    (A) Baryons   (B) Hadrons   (C) Fermions   (D) Mesons

PHYSICS   PAPER-II   GROUP-II   MTN-GII-21   TIME ALLOWED: 20 Minutes
OBJECTIVE   MAXIMUM MARKS: 17

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that bubble in front of that question number, on bubble sheet. Use marker or pen to fill the bubbles. Cutting or filling two or more bubbles will result in zero mark in that question. No credit will be awarded in case BUBBLES are not filled. Do not solve question on this sheet of OBJECTIVE PAPER.

Q.No.1

(1)   The SI unit of Impedance is:

(A) Henry   (B) Hertz   (C) Ohm   (D) Volt

(2)   Which one of the following is the example of crystalline solid?

(A) Plastic   (B) Glass   (C) Rubber   (D) Zirconia

(3)   Which component of the transistor has greater concentration of impurity?

(A) Base   (B) Emitter   (C) Collector   (D) Resistor

(4)   In full wave rectification, the numbers of diodes required is:

(A) 4   (B) 3   (C) 1   (D) 5

(5)   Plank's constant 'h' has the same unit as that of:

(A) Angular momentum   (B) Linear velocity   (C) Torque   (D) Power

(6)   The factor $\dfrac{h}{m_0 c}$ has the dimension of:

(A) Mass   (B) Time   (C) Length   (D) Power

(7)   The radius of 10th orbit of hydrogen atom in nm is:

(A) 0.53   (B) 51.3   (C) 5.3   (D) 53

(8)   The binding energy per nucleon is maximum for:

(A) Iron   (B) Helium   (C) Radium   (D) Copper

(9)   Which of the following is highly penetrating?

(A) α – particles   (B) γ – rays   (C) X – rays   (D) β – particles

(10)   The force on electron in an electric field of magnitude $10^4 \, NC^{-1}$ is:

(A) $1.9 \times 10^{-15} N$ (B) $1.6 \times 10^{-15} N$ (C) $1.6 \times 10^{-8} N$ (D) $1.8 \times 10^{-15} N$

(11)   The total electric flux through any closed surface depends upon:

(A) Charge   (B) Medium   (C) Geometry of closed surface   (D) Both A and B

(12)   Heat generated by a 50 watt bulb in one hour is:

(A) $36000 \, J$ (B) $48000 \, J$ (C) $1800 \, J$ (D) $180000 \, J$

(13)   One Tesla(T) is equal to:

(A) $1 \, NA^{-1}$ (B) $1 \, Nm^{-1}$ (C) $1 \, NA^{-1}m$ (D) $1 \, NA^{-1}m^{-1}$

(14)   A 5 meter wire carrying a current of $2A$ is at right angle to uniform magnetic field of 0.5 Tesla. The force on the wire is:

(A) $5N$ (B) $4N$ (C) $2N$ (D) $1.5N$

(15)   Lenz's law is in accordance with the law of conservation of:

(A) Mass   (B) Momentum   (C) Energy   (D) Charge

(16)   The emf induced in $1mH$ inductor in which current changes from $5A$ to $3A$ in $1ms$ is:

(A) $2 \times 10^{-6} V$ (B) $2V$ (C) $6 \times 10^{-6} V$ (D) $8V$

(17)   Current leads the applied voltage in pure _____ circuit.

(A) Resistive   (B) Capacitive   (C) Inductive   (D) Reactive

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that bubble in front of that question number. Use marker or pen to fill the bubbles. Cutting or filling two or more bubbles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave others blank. No credit will be awarded in case BUBBLES are not filled. Do not solve questions on this sheet of OBJECTIVE PAPER.

Q.No.1

(1) The study of electric charges at rest under the action of electric forces is known as:
(A) Electromagnetism (B) Electrostatics (C) Magnetic Induction (D) Electric field

(2) A particle carrying a charge of $2e$ falls through a potential difference of $3V$. The energy acquired by it is:
(A) $9.6 \times 10^{-18} J$ (B) $9.6 \times 10^{-19} J$ (C) $1.6 \times 10^{-19} J$ (D) $9.6 \times 10^{-17} J$

(3) Kirchhoff's 2nd rule is a manifestation of law of conservation of:
(A) Energy (B) Charge (C) Mass (D) Momentum

(4) Formula for magnetic field due to solenoid is given by:
(A) $\mu_o I$ (B) $\mu_o nI$ (C) $\mu_o SI$ (D) $\mu_o n\ell$

(5) The value of permeability of free space 'μ_o' is: (A) $4\pi \times 10^{-7} Wb\, A^{-1} m^{-1}$
(B) $4\pi \times 10^{7} Wb\, A^{-1} m^{-1}$ (C) $4\pi \times 10^{-7} Wb\, Am^{-1}$ (D) $4\pi \times 10^{7} Wb\, Am^{-1}$

(6) The Lenz's Law is also a statement of:
(A) Law of Conservation of Momentum (B) Law of Conservation of Charge
(C) Law of Conservation of Energy (D) Faraday Law of Electromagnetic Induction

(7) Electric current produces magnetic field was discovered by:
(A) Faraday (B) Maxwell (C) Oersted (D) Lenz

(8) The impedance of R – L series circuit is:
(A) $Z = \sqrt{R^2 + X_L^2}$ (B) $Z = \sqrt{R^2 + X_C^2}$ (C) $Z = \sqrt{R + X_L}$ (D) $Z = R$

(9) The capacitance required to construct a resonance circuit of frequency $1000 kHz$ with an inductor of $5mH$ is:
(A) $5.09 pF$ (B) $5.09 \mu F$ (C) $5.09 mF$ (D) $50.9 pF$

(10) Substances which undergo plastic deformation until they break are called: (A) Brittle Substances
(B) Non-magnetic Substances (C) Magnetic Substances (D) Ductile Substances

(11) The size of base of transistor is of the order of:
(A) $10^{-6} m$ (B) $10^{-5} m$ (C) $10^{-4} m$ (D) $10^{-3} m$

(12) A two inputs NAND gate with inputs A and B has an output '0' if:
(A) A is 0 (B) B is 0 (C) Both A and B are 0 (D) Both A and B are 1

(13) Compton wavelength is:
(A) $\dfrac{h}{m_0 c^2}$ (B) $\dfrac{hc}{m_0}$ (C) $\dfrac{h}{m_0 c}$ (D) $\dfrac{hc}{m_0 \lambda}$

(14) The energy required for pair production is:
(A) $0.51 MeV$ (B) $1.02 MeV$ (C) $2.04 MeV$ (D) $3.06 MeV$

(15) The relation for Balmer Series is written as:
(A) $\dfrac{1}{\lambda} = R_H \left(\dfrac{1}{2^2} - \dfrac{1}{n^2} \right)$ (B) $\dfrac{1}{\lambda} = R_H \left(\dfrac{1}{3^2} - \dfrac{1}{n^2} \right)$ (C) $\dfrac{1}{\lambda} = R_H \left(\dfrac{1}{4^2} - \dfrac{1}{n^2} \right)$ (D) $\dfrac{1}{\lambda} = R_H \left(\dfrac{1}{5^2} - \dfrac{1}{n^2} \right)$

(16) 1 rem is equal to:
(A) $0.1 Sv$ (B) $0.01 Sv$ (C) $10 Sv$ (D) $100 Sv$

(17) Subatomic particles are divided into:
(A) Six groups (B) Five groups (C) Four groups (D) Three groups

PHYSICS PAPER-II (NEW SCHEME) GROUP-II
TIME ALLOWED: 20 Minutes **OBJECTIVE** MAXIMUM MARKS: 17

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that bubble in front of that question number. Use marker or pen to fill the bubbles. Cutting or filling two or more bubbles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave others blank. No credit will be awarded in case BUBBLES are not filled. Do not solve questions on this sheet of OBJECTIVE PAPER.

Q.No.1

(1) The electric potential at mid point in an electric dipole is:

(A) 0.5 V (B) 0 V (C) 1 V (D) 1.5 V

(2) Negative of potential gradient is equal to:

(A) Magnetic intensity (B) Electric flux (C) Electric intensity (D) Magnetic flux

(3) Drift velocity of electrons is of the order of:

(A) $10^3\, kms^{-1}$ (B) $10^{-3}\, ms^{-1}$ (C) $10^3\, ms^{-1}$ (D) $10^5\, ms^{-1}$

(4) The SI unit of magnetic induction is:

(A) Weber (B) Gauss (C) Tesla (D) Nth

(5) A cross (×) represents the direction of magnetic field:

(A) Out of page (B) Tangent to page (C) Parallel to page (D) In to the page

(6) The only difference between the construction of A.C and D.C generator is:

(A) Carbon Brushes (B) Commutator (C) Coil (D) Magnetic field

(7) In three phase A.C supply, the coils are inclined at an angle of:

(A) 0° (B) 90° (C) 130° (D) 120°

(8) The SI unit of $\sqrt{LC}$ is:

(A) Second (B) Ampere (C) Hertz (D) Farad

(9) In extrinsic semiconductors, doping is of the order of:

(A) 1 atom to 10^4 (B) 1 atom to 10^8 (C) 1 atom to 10^6 (D) 1 atom to 10^3

(10) The operation of complementation is performed by:

(A) AND Gate (B) OR Gate (C) XOR Gate (D) NOT Gate

(11) In op-amp, the input resistance is of the order of:

(A) Several Mega Ohms (B) Several Kilo Ohms (C) Few Ohms (D) Hundred Ohms

(12) The factor $\dfrac{h}{m_o c}$ has the dimensions of:

(A) Time (B) Mass (C) Length (D) Energy

(13) The value of Stefen's constant "σ" is given by: (A) $5.67 \times 10^{-8} Wm^{-2} K^{-2}$

(B) $5.67 \times 10^{-8} Wm^{-2} K^{-4}$ (C) $5.67 \times 10^{8} Wm^2 K^2$ (D) $5.67 \times 10^{-8} W^2 m^2 K^{-2}$

(14) The typical nuclei have diameter less than:

(A) $10^{-14}\, m$ (B) $10^{-12}\, m$ (C) $10^{-10}\, m$ (D) $10^{-8}\, m$

(15) The particles which do not experience strong nuclear force are called:

(A) Hadrons (B) Baryons (C) Leptons (D) Mesons

(16) Iodine – 131 is used for the treatment of:

(A) Thyroid glands (B) Bones (C) Lungs (D) Eyes

(17) The term $\dfrac{\Delta\phi}{\Delta t}$ has the same units as:

(A) Time (B) Current (C) Electromotive force (D) Magnetic flux

INTERMEDIATE PART-II (12th CLASS)

PHYSICS PAPER-II (NEW SCHEME) GROUP-I MĪN-GI-12-18

TIME ALLOWED: 20 Minutes **OBJECTIVE** MAXIMUM MARKS: 17

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that bubble in front of that question number. Use marker or pen to fill the bubbles Cutting or filling two or more bubbles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave others blank. No credit will be awarded i case BUBBLES are not filled. Do not solve questions on this sheet of OBJECTIVE PAPER.

Q.No.1

(1) The phase at the positive peak is:-

(A) Zero (B) π (C) 2π (D) $\frac{\pi}{2}$

(2) In three phase A.C. supply, if first coil has phase $0°$, then the other two coils will have phases:-

(A) $0°$ and $120°$ (B) $120°$ and $240°$ (C) $240°$ and $360°$ (D) $0°$ and $360°$

(3) In ferromagnetic substances, domain contains atoms nearly equal to:-

(A) 10^8 to 10^{12} (B) 10^{10} to 10^{14} (C) 10^{12} to 10^{16} (D) 10^{14} to 10^{18}

(4) _____ is the building block of every complex electronic circuit.

(A) Semiconductor diode (B) Resistor (C) Capacitor (D) Amplifier

(5) Photodiode is used for the detection of:-

(A) Light (B) Thermal radiation (C) Radio waves (D) Sound waves

(6) The rest mass of Photon is:-

(A) Infinite (B) Small (C) Zero (D) $1.67 \times 10^{-27} kg$

(7) Application of wave nature of particle is:-

(A) Photodiode (B) Simple microscope

(C) Compound microscope (D) Electron microscope

(8) X – rays are similar in nature to:-

(A) γ – rays (B) β – rays (C) α – rays (D) Cathode rays

(9) Hydrogen bomb is an example of:-

(A) Nuclear fission (B) Nuclear fusion (C) Chain reaction (D) Chemical reaction

(10) Various types of cancer are treated by:-

(A) Carbon – 14 (B) Nickel – 63 (C) Cobalt – 60 (D) Strontium – 90

(11) In photocopier, the drum is coated with a layer of:-

(A) Copper (B) Silver (C) Selenium (D) Gold

(12) If time constant in RC series circuit is small, then capacitor is charged:-

(A) Slowly (B) Rapidly (C) At constant rate (D) Intermittently

(13) The current flowing through each resistor of equal resistance in parallel combination is:-

(A) Same (B) Different (C) Zero (D) Infinite

(14) Two parallel wires carrying currents in the same direction:-

(A) Have no effect (B) Repel each other (C) Have no field around them (D) Attract each other

(15) Cathode ray oscilloscope works by deflecting beam of _____ .

(A) Protons (B) Electrons (C) Neutrons (D) Positrons

(16) The mutual inductance of the coils depends upon:-

(A) Density of coil (B) Material of coil (C) Geometry of coil (D) Stiffness of coil

(17) A 50 mH coil carries a current of 2.0 A. Then energy stored in its magnetic field is:-

(A) 0.1 J (B) 10 J (C) 100 J (D) 1000 J

Paper Code
Number: 4472
2018 (A)
Roll No._____
INTERMEDIATE PART-II (12th CLASS)

PHYSICS PAPER-II (NEW SCHEME)   GROUP-II MTN-G2-12-18
TIME ALLOWED: 20 Minutes   **OBJECTIVE**   MAXIMUM MARKS: 17

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that bubble in front of that question number. Use marker or pen to fill the bubbles. Cutting or filling two or more bubbles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave others blank. No credit will be awarded in case BUBBLES are not filled. Do not solve questions on this sheet of OBJECTIVE PAPER.

Q.No.1

(1) The value of ε_r for air is:-
(A) 1.6   (B) 1.06   (C) 1.006   (D) 1.0006

(2) In case of photocopier, a special dry, black powder called toner is given a:-
(A) Positive charge   (B) Negative charge   (C) Neutral   (D) First positive then negative

(3) The potential difference between the head and tail of an electric eel can be up to:-
(A) 500 V   (B) 600 V   (C) 700 V   (D) 800 V

(4) The current flowing towards the reader can be represented by a symbol:-
(A) Dot   (B) Dash   (C) Cross   (D) Line

(5) The vector sum of the electric force and magnetic force is known as:-
(A) Maximum force   (B) Lorentz force   (C) Deflecting force   (D) Newton's force

(6) The expression for energy density of solenoid is given as:-
(A) $\dfrac{B^2}{\mu_o}$ (B) $2\dfrac{B^2}{\mu_o}$ (C) $\dfrac{1}{2}\dfrac{B^2}{\mu_o}$ (D) $B^2 \mu_o$

(7) A simple device that prevents the direction of current from changing is called:-
(A) Commutator   (B) Rotor   (C) Armature   (D) Detector

(8) The unit of impedance is:-
(A) Volt   (B) Ohm   (C) Farad   (D) Watt

(9) At resonance, the behaviour of R – L – C series circuit is:-
(A) Resistive   (B) Capacitive   (C) Inductive   (D) Modulative

(10) Glass is also known as:-
(A) Solid   (B) Liquid   (C) Solid liquid   (D) Gas

(11) The open loop gain of Op – Amp is of the order of:-
(A) 10^2 (B) 10^3 (C) 10^4 (D) 10^5

(12) The common emitter current amplification factor β is given by:-
(A) $\dfrac{I_C}{I_E}$ (B) $\dfrac{I_C}{I_B}$ (C) $\dfrac{I_E}{I_B}$ (D) $\dfrac{I_B}{I_E}$

(13) The speed of earth around its orbit is:-
(A) $10\,km/s$ (B) $20\,km/s$ (C) $25\,km/s$ (D) $30\,km/s$

(14) The unit of Plank's constant "h" is:-
(A) $J\,C$ (B) J/C (C) $J\,S$ (D) J/S

(15) In Helium – Neon Laser, the discharge tube is filled with:-
(A) 85 % of He (B) 80 % of He (C) 90 % of He (D) 95 % of He

(16) The half-life of radon gas is:-
(A) 3.8 hours   (B) 3.8 minutes   (C) 3.8 days   (D) 3.8 years

(17) The background radiation to which we are exposed, on the average is:-
(A) $1\,mSv$ per year   (B) $2\,mSv$ per year   (C) $3\,mSv$ per year   (D) $4\,mSv$ per year

Physics	(C)	L.K.No. 1463	Paper Code No. 8475
Paper II	(Objective Type)	Inter (Ist – A – Exam – 2024)	
Time : 20 Minutes		Inter (Part – II)	(Group Ist)
Marks : 17	BWP-1-24	Session (2020 – 22) to (2022 – 24)	

Note : Four choices A , B , C ,D to each question are given. Which choice is correct fill that circle in front of that Question No. on the Objective Bubble Sheet. Use Marker or Pen to fill the circles. Cutting or filling two or more circles will result in Zero Mark in that Question.

Q.No.1	
(1)	A wire of resistance 9 Ohm is cut into three equal parts and these are connected in parallel. The Equivalent Resistance is : (A) 1 Ohm (B) 3 Ohm (C) 9 Ohm (D) 27 Ohm
(2)	By Introducing a Dielectric between the plates of a Charged Capacitor , energy stored will be : (A) Increased (B) Decreased (C) Remain Constant (D) Nothing Can Be Said
(3)	Force between two point charges 10 μC and 40 μC is 9000 N. Then distance between them is : (A) 2 cm (B) 20 cm (C) 20 m (D) 400 m
(4)	In case of Torque on a Current carrying coil , ' α ' is angle between : (A) $\bar{B}$ and $\bar{A}$ (B) Pole faces and Plane of Coil (C) $\bar{B}$ and Plane of Coil (D) None of these
(5)	A Transformer consists of 500 turns in Primary and 200 turns in Secondary . When a battery of emf 9V is connected at the Primary , The Voltage obtained at Secondary is : (A) 3 . 6 V (B) 22 . 4 V (C) 9 V (D) Zero Volt
(6)	A steady current of 1 A in a coil of 1000 turns generates a flux of 10^{-4} Wb to pass through the loop of the coil. The energy stored in the inductor is : (A) 5 J (B) 0 . 05 J (C) 0 . 5 J (D) 50 J
(7)	The restoring couple in moving coil Galvanometer is due to : (A) Current in the coil (B) Magnetic Field (C) Material of Coil (D) Twist In Wire
(8)	A parallel resonance circuit has resonance frequency ' f ' . If Capacitance of this circuit is increased four times , then resonance frequency becomes : (A) 2 f (B) 4 f (C) f/4 (D) f/2
(9)	The phase difference between input voltage and output voltage of the Transistor Amplifier is : (A) 0° (B) 90° (C) 180° (D) 120°
(10)	In Hysteresis Loop, lagging of magnetism behind magnetizing current is called : (A) Saturation (B) Retentivity (C) Hysteresis (D) Coercivity
(11)	Power factor is 1 for : (A) Pure Inductor (B) Pure Capacitor (C) Pure Resistor (D) Both Capacitor and Inductor
(12)	A Transistor has a base current of 1mA and emitter current 100 mA . The current gain of the transistor is : (A) 1 (B) 99 (C) 100 (D) 101
(13)	In laser , the excited atom returns to its ground state from its meta stable state is about : (A) 10^{-10} s (B) 10^{-8} s (C) 10^{-5} s (D) 10^{-3} s
(14)	Which of the following detectors can count fast and operate at low voltage : (A) Geiger Counter (B) Wilson Cloud Chamber (C) Solid State Detector (D) Scintillation Counter
(15)	The momentum of a Photon of frequency ' f ' is : (A) hc / f (B) c / hf (C) f / hc (D) hf / c
(16)	In a Nuclear Reactor , Cadmium rods are used to : (A) Speed Up Electrons (B) Slow Down Neutrons (C) Absorb Neutrons (D) Produce Neutrons
(17)	The de-Broglie wavelength of a particle of mass ' m ' moving with Kinetic energy ' E ' is : (A) $\sqrt{h/2mE}$ (B) $h/\sqrt{2mE}$ (C) h / 2mE (D) $\sqrt{h}$ / 2mE

Note : Four choices A, B, C, D to each question are given. Which choice is correct fill that circle in front of that Question No. on the Objective Bubble Sheet. Use Marker or Pen to fill the circles. Cutting or filling two or more circles will result in Zero Mark in that Question.

Q.No.1	
(1)	The SI unit of Electric Flux is : (A) $Nm^2 C^{-1}$ (B) $Nm^{-2} C$ (C) $Nm^2 C^{-2}$ (D) $Nm C^{-2}$
(2)	The Force between two point charges in the presence of air is 80 N. When a dielectric "Germanium" of dielectric constant 16 is placed between them, the force reduces to : (A) 2N (B) 5N (C) 10N (D) 32N
(3)	The Potential Difference between the head and tail of an Electric EEL can be up to : (A) 200 V (B) 500 V (C) 600 V (D) 1000 V
(4)	The relation between Current 'I' and angle of deflection 'θ' in a moving coil Galvanometer is : (A) $I \propto \theta$ (B) $I \propto \dfrac{1}{\theta}$ (C) $I \propto Sin\theta$ (D) $I \propto Cos \theta$
(5)	Torque on a Current Carrying coil placed in a uniform magnetic field is minimum when angle between plane of coil and magnetic field is : (A) 0° (B) 30° (C) 45° (D) 90°
(6)	When the motor is just started, the back emf is : (A) Maximum (B) Minimum (C) Almost Zero (D) Equal to Current
(7)	The Inductor Stores energy in : (A) Electric Field (B) Magnetic Field (C) Gravitational Field (D) Nuclear Field
(8)	The Slope of $q - t$ Curve at any instant of time when A.C passes through a capacitor represents : (A) Current (B) Voltage (C) Inductance (D) Capacitance
(9)	The Impedance of a parallel resonance circuit at resonance is : (A) Resistive (B) Capacitive (C) Inductive (D) Zero
(10)	Which of the following is a brittle substance : (A) Lead (B) Copper (C) Glass (D) Wrought Iron
(11)	A Photodiode can turn its current ON and OFF in : (A) Milli Seconds (B) Micro Seconds (C) Nano Seconds (D) Mega Seconds
(12)	The size of base in a transistor is of the order of : (A) 10^{-4} m (B) 10^{-6} m (C) 10^{-8} m (D) 10^{-10} m
(13)	In Photoelectric Effect, the Photoelectric Current can be increased by : (A) Increasing the Frequency of Light (B) Decreasing the Frequency of Light (C) Increasing the Intensity of Light (D) Decreasing the Intensity of Light
(14)	When a platinum wire is heated, it becomes white at about : (A) 900^oC (B) 1100^oC (C) 1300^oC (D) 1600^oC
(15)	K_α X – rays are produced due to transition of electron from : (A) K to L Shell (B) L to K Shell (C) M to K Shell (D) M to L Shell
(16)	The range of weak nuclear force is of the order of : (A) 10^{-9} m (B) 10^{-10} m (C) 10^{-17} m (D) 10^{-15} m
(17)	In Karachi Nuclear Power Plant (KANUP), the moderator used is : (A) Graphite (B) Carbon (C) Heavy Water (D) Boron Rod

Note : Four possible choices A , B , C ,D to each question are given. Which choice is correct fill that circle in front of that Question No. Use Marker or Pen to fill the circles. Cutting or filling two or more circles will result in Zero Mark in that Question.

Bwp-12-1-23

Q.No.1		
(1)	Half Life of Uranium – 239 is :	(A) 26.5 Minutes (B) 23.5 Minutes (C) 24.5 Minutes (D) 25.5 Minutes
(2)	The Number of Neutrons in $^{238}_{92}U$ is :	(A) 92 (B) 238 (C) 146 (D) 330
(3)	For Paschen Series, the value of 'n' starts from :	(A) 2 (B) 8 (C) 6 (D) 4
(4)	1 Kg Mass will be equivalent to energy :	(A) 9×10^8 J (B) 9×10^{16} J (C) 9×10^{12} J (D) 9×10^{19} J
(5)	Mathematical Treatment for Electromagnetic Waves was given by :	(A) Faraday (B) Maxwell (C) Hertz (D) Coulomb
(6)	In forward biasing a p – n junction ideal, offers :	(A) High Resistance (B) Infinite Resistance (C) Low Resistance (D) Medium Resistance
(7)	Which One is not a Donor Impurity here :	(A) Antimony (B) Phosphorus (C) Aluminium (D) Arsenic
(8)	Which One is not Crystalline Solid :	(A) Zinc (B) Copper (C) Nylon (D) Zirconia
(9)	The graph between time and A.C. Voltage is known as :	(A) Parabola (B) Tangent Curve (C) Sine Curve (D) Straight Line
(10)	The Peak Value of A.C. Source is 20 A, then its rms value will be :	(A) 20 A (B) 10 A (C) 14.1 A (D) 28.2 A
(11)	Inductance is measured in :	(A) Ohm (B) Volts (C) Henry (D) Weber
(12)	The Mutual Inductance of Coils depends on :	(A) Stiffness (B) Density (C) Nature of Material (D) Geometry
(13)	The relation between Tesla and smaller unit Gauss of Magnetic Induction is given by :	(A) $1 T = 10^3 G$ (B) $1 T = 10^6 G$ (C) $1 T = 10^2 G$ (D) $1 T = 10^4 G$
(14)	The most suitable material for making magnet is :	(A) Soft Iron (B) Copper (C) Gold (D) Silver
(15)	One Coulomb per second is equal to :	(A) One Volt (B) One Ampere (C) One Watt (D) One Ohm
(16)	If the distance between two point charges is halved, the Electric Intensity becomes :	(A) Half (B) ¼ Times (C) 4 Times (D) Double
(17)	Relative Permitivity for air is :	(A) 1.06 (B) 1.006 (C) 1.0006 (D) 1.6

Note : Four possible choices A , B , C ,D to each question are given. Which choice is correct fill that circle in front of that Question No. Use Marker or Pen to fill the circles. Cutting or filling two or more circles will result in Zero Mark in that Question.

Bwp-12-2-23

Q.No.1	
(1)	A.C Through Resistor, Voltage and Current have the phase : (A) Out of Phase (B) Perpendicular (C) In Phase (D) Antiparallel
(2)	A pair of Quark and Anti Quark makes : (A) Baryons (B) Meson (C) Photon (D) Proton
(3)	Nuclear Fission Chain Reaction is controlled by : (A) Steel Rod (B) Graphite Rod (C) Cadmium Rod (D) Platinum Rod
(4)	Balmer Series lies in the : (A) Ultraviolet Region (B) Visible Region (C) Far Infrared Region (D) Infrared Region
(5)	The Unit of Work Function is : (A) Watt (B) eV (C) *Farad* (D) *Photocell*
(6)	Which One is Low Energy Photon : (A) X – Ray (B) Infrared Light (C) Visible Light (D) Ultraviolet Light
(7)	The Output Voltage of a Rectifier is : (A) Perfectly Direct (B) Smooth (C) Pulsating (D) Alternating
(8)	The Potential Barrier in Diode stops movement of : (A) Electron (B) Holes (C) Photon (D) Both A and B
(9)	Which of the following does not go Plastic Deformation : (A) Copper (B) Wrought Iron (C) Head (D) Glass
(10)	The device which only allows the A.C. is : (A) Capacitor (B) Inductor (C) Generator (D) Transformer
(11)	The current flowing through the coil due to induced emf depends upon : (A) Magnetic Flux (B) Area of Coil (C) Shape of Coil (D) Resistance of Coil
(12)	If we want to make Magnetic Field stronger the value of induced current is : (A) Decreased (B) Vanish (C) Increased (D) Constant
(13)	An Ammeter is always connected in : (A) Parallel (B) Perpendicular (C) Series (D) Oblique
(14)	Current Passing through the coil of Galvanometer is : (A) $\dfrac{c}{BAN}\theta$ (B) $\dfrac{NAB}{c}\theta$ (C) $\dfrac{AN}{BC}\theta$ (D) $\dfrac{CN}{BA}\theta$
(15)	The substance having negative temperature co - efficient is : (A) Carbon (B) Gold (C) Iron (D) Tungsten
(16)	Electric Intensity due to the oppositely charged parallel plate is : (A) Zero (B) $\dfrac{1}{\varepsilon_0}$ (C) $\dfrac{\sigma}{2\varepsilon_0}$ (D) $\dfrac{\sigma}{\varepsilon_0}$
(17)	The Negative of Potential Gradient is : (A) Electric Field Intensity (B) Electromotive Force (C) Electrostatic Force (D) Potential Difference

Physics (C) L.K.No. 1307 Paper Code No. 8473

Paper II	(Objective Type)	inter – A – 2022	(Group ist)
Time :	20 Minutes	Inter (Part - II)	
Marks :	17	Session (2018 -20) to (2020 – 22)	BIAR-G1-22

Note : Four possible choices A , B , C ,D to each question are given. Which choice is correct fill that circle in front of that Question No. Use Marker or Pen to fill the circles. Cutting or filling two or more circles will result in Zero Mark in that Question.

Q.No.1	
(1)	The heat produced by the passage of current through a resistor is : (A) I^2Rt (B) IR^2t (C) I^2R (D) IRt^2
(2)	A particle having a charge of **2e** falls through a potential difference of 3.0 Volts. The change in its K.E. is equal to : (A) 6.0 eV (B) 5.0 eV (C) 4.0 eV (D) 8.0 eV
(3)	Photocopier and Inkjet Printers are the applications of : (A) Electricity (B) Magnetism (C) Electrostatics (D) Electromagnetism
(4)	A Voltmeter is always connected in : (A) Series (B) Parallel (C) Place of Battery (D) All these
(5)	A device which converts Electrical Energy into Mechanical Energy is : (A) Transformer (B) D.C. Motor (C) A.C. Generator (D) D.C. Generator
(6)	If Magnetic Field is doubled , then the Magnetic Energy density becomes : (A) Two Times (B) Three Times (C) Half Time (D) Four Times
(7)	In Cathode Ray Oscilloscope, grid controls : (A) Temperature of Filament (B) Charge of Electrons (C) Number of Electrons (D) Energy of Electrons
(8)	Root Mean Square Value of Alternating Voltage with V_0 = 100 V , is equal to : (A) 0.7 V (B) 7 V (C) 700 V (D) 70 V
(9)	In case of Silicon, the value of Potential Barrier is : (A) 0.6 V (B) 0.7 V (C) 0.1 V (D) 0.3 V
(10)	Example of a Ductile Material is : (A) Glass (B) Wood (C) Lead (D) Diamond
(11)	In RLC Series Circuit , the condition for resonance is (A) $X_L = X_C$ (B) $X_L > X_C$ (C) $X_L < X_C$ (D) $X_L = X_C + R$
(12)	In Full Wave Rectification, number of Diodes required are : (A) 3 (B) 5 (C) 1 (D) 4
(13)	Photons emitted in the inner Shell Transition are : (A) Continuous X - rays (B) Gamma Rays (C) Characteristic X - rays (D) Energetic X – rays
(14)	Absorbed Dose is defined as : (A) M x E (B) $\frac{M}{E}$ (C) $\frac{E}{M}$ (D) $\frac{E}{C}$
(15)	0.1 Kg mass will be equivalent to the energy (A) 5×10^8 Joules (B) 6×10^{19} Joules (C) 9×10^{15} Joules (D) 9×10^{19} Joules
(16)	Slow Neutrons can cause Fission in : (A) Uranium – 235 (B) Uranium – 238 (C) Plutonium – 239 (D) Thorium – 234
(17)	The Velocity at which relativistic length of a body reduces to half of its original length is : (A) $\frac{1}{2}C$ (B) $\frac{\sqrt{3}}{2}C$ (C) $\frac{3}{4}C$ (D) $\frac{1}{\sqrt{2}}C$

Physics (A)   L.K.No. 1308   Paper Code No. 8472

Paper II	(Objective Type)	Inter – A – 2022	(Group 2nd)
Time :	20 Minutes	Inter (Part - II)	BuOP-G2-22
Marks :	17	Session (2018 – 20) to (2020 – 22)	

Note : Four possible choices A , B , C ,D to each question are given. Which choice is correct fill that circle in front of that Question No. Use Marker or Pen to fill the circles. Cutting or filling two or more circles will result in Zero Mark in that Question.

Q.No.1		
(1)	The absolute potential at a point distant 20 cm from a charge of $2\,\mu C$ is :	(A) 9×10^2 V (B) 9×10^3 V (C) 9×10^4 V (D) 9×10^5 V
(2)	$\dfrac{v}{m}$ is unit of :	(A) Magnetic Field Intensity (B) Electric Field Intensity (C) Electric Force (D) Gravitational Force
(3)	Three Resistors of Resistance $2\,\Omega$, $3\,\Omega$ and $6\,\Omega$ are connected in series. Their Equivalent Resistance is :	(A) $10\,\Omega$ (B) $11\,\Omega$ (C) $\dfrac{1}{10}\,\Omega$ (D) $\dfrac{1}{11}\,\Omega$
(4)	Which of the following Apparatus is used to measure Current, Voltage and Resistance :	(A) Ammeter (B) Voltmeter (C) Avometer (D) Galvanometer
(5)	To convert a Galvanometer into a Voltmeter, a high resistance connected in series with Galvanometer is given by :	(A) $R_h = \dfrac{V}{R_g} - I_g$ (B) $\dfrac{V}{R_g} + I_g = R_h$ (C) $R_h = \dfrac{V}{I_g} - R_g$ (D) $\dfrac{V}{I_g} + R_g = R_h$
(6)	The direction of the Induced Current is always so as to oppose the change which causes the current :	(A) Faraday's Law (B) Lenz's Law (C) Ohm's Law (D) Kirchhoff's Ist Rule
(7)	In D.C. Generator, Split Rings act as :	(A) Capacitor (B) Commutator (C) Inductor (D) Resistor
(8)	The basic circuit element in a D.C. Circuit which controlled the current and voltage is :	(A) Transformer (B) Resistor (C) Inductor (D) Transistor
(9)	The device which allows only the flow of D.C. is	(A) Generator (B) Transformer (C) Inductor (D) Capacitor
(10)	A Semi Conductor will behave as an Insulator at temperature :	(A) 0 K (B) 0°C (C) 10 K (D) 10°C
(11)	Which Diode works at Reverse Biasing :	(A) LED (B) Photo – Voltaic Cell (C) Photodiode (D) Silicon Diode
(12)	The Voltage Gain of an Amplifier having $r_{ie} = 1\,\Omega$, $\beta = 100$, $R_e = 20\,\Omega$ is :	(A) 1000 (B) 2000 (C) 500 (D) 5000
(13)	The Materialization of Energy take place in the process of :	(A) Photoelectric Effect (B) Compton Effect (C) Pair Production (D) Annihilation of Matter
(14)	The factor $\dfrac{h}{m_o c}$ has the unit of :	(A) Kilogram (B) Second (C) Meter (D) Joule
(15)	The equation of Rydberg's Constant is :	(A) $R_H = \dfrac{hc}{m_o}$ (B) $R_H = \dfrac{E_o}{hc}$ (C) $R_H = \dfrac{E_o}{\lambda}$ (D) $R_H = \dfrac{1}{hc}$
(16)	Binding Energy for deuteron nucleus is given by :	(A) 2.8 MeV (B) 2.23 MeV (C) 2.28 MeV (D) 2.25 MeV
(17)	Electrons are :	(A) Hadrons (B) Leptons (C) Quarks (D) Baryons

Note : Four possible choices A , B , C ,D to each question are given. Which choice is correct fill that circle in front of that Question No. Use Marker or Pen to fill the circles. Cutting or filling two or more circles will result in Zero Mark in that Question.

Q.No.1

(1) The Gradient of the Scalar Field is always be a   :

(A) Scalar Quantity (B) Vector Quantity (C) Variable Quantity (D) Fixed Quantity

(2) Work done by Magnetic Force on a charge particle while moving through Magnetic Field is :

(A) qvB (B) vB/q (C) $\dfrac{q}{vB}$ (D) Zero

(3) Which one of the following is used to determine internal resistance of a cell :

(A) Potentiometer (B) Wheat Stone Bridge (C) Ammeter (D) Voltmeter

(4) On removing the dielectric from a charged capacitor , its energy   :

(A) Increases (B) Remains Unchanged (C) Decreases (D) None of these

(5) The Ratio of Magnetic Force (Fm) and Electric Force (Fe) acting on a charge moving undeflected through the field is   :   (A) E / B (B) B / E (C) 1 (D) $\dfrac{E}{vB}$

(6) The emf induced in 1 mH inductance in which current changes from 5A to 3A in 1ms is :

(A) 2×10^{-6} V (B) 8×10^{-6} V (C) 2 V (D) 8 V

(7) The Inductance of Coil is proportional to

(A) Its shape (B) The number of turns (C) The Resistance of Coil (D) The Square of the number of turns

(8) In an A.C. Circuit , a Resistance R is connected in Series with an inductance L if phase angle between voltage and current be 45° , the value of inductive reactance will be   :

(A) 2 R (B) R (C) $\dfrac{R}{2}$ (D) $\dfrac{R}{4}$

(9) An A.C. varies as a function of :   (A) Time (B) Current (C) Voltage (D) Displacement

(10) In Common Emitter Transistor Amplifier the Input Signal and Output Signal are always   :

(A) Have the same Magnitude (B) Have Same Phase (C) Out of the Phase by 180° (D) Negative

(11) The value of Input Resistance of OP – Amplifier is of the order of   :

(A) Few Ohms (B) Milli Ohms (C) Kilo Ohms (D) Mega Ohms

(12) Very weak magnetic field produced by brain can be detected by   :

(A) MRI (B) Metallic Needle (C) Squids (D) Cat Scanner

(13) Who gave the idea of Matter Waves : (A) de – Broglie (B) Einstein (C) Huygen (D) Max - planck

(14) Dead Time of G.M. Counter is approximately :

(A) 10^{-6} s (B) 10^{-5} s (C) 10^{-4} s (D) 10^{-3} s

(15) In order to increase the stopping potential of ejected photoelectrons , there should be an increase in :

(A) Intensity of Radiation   (B) Wavelength of Radiation

(C) Frequency of Radiation (D) Both Wavelength of Radiation and Intensity of Radiation

(16) Leptons are particles do not experience :

(A) Strong Nuclear Force (B) Weak Nuclear Force (C) Electric Force (D) Magnetic Force

(17) Which of the following is the energy required (in ev) for ionizing an excited Hydrogen atom   :

(A) 13 . 6 ev (B) 10 . 2 ev (C) More than 13 . 6 ev (D) 3 . 4 ev or less than it

Physics	(D)	L.K.No. 1308	Paper Code No. 8478

Paper II

Note : Four possible choices A , B , C , D to each question are given. Which choice is correct fill that circle in front of that Question No. Use Marker or Pen to fill the circles. Cutting or filling two or more circles will result in Zero Mark in that Question.

Q.No.1

(1) Electric Flux does not depend upon :

(A) Charge Enclosed (B) Medium (C) Medium and Charge Enclosed (D) Shape of Closed Surface

(2) One Tesla in terms of other units i– e IT = ? :

(A) $1\ NA^{-1}m^{-1}$ (B) $1\ Nm\ A^{-1}$ (C) $1\ NA^{-1}m^{-2}$ (D) $1\ NA^{-1}m^{2}$

(3) Kirchhoff's Second Rule is based on the Law of Conservation of :

(A) Mass (B) Momentum (C) Energy (D) Charge

(4) Electric Intensity at a point close to an infinite sheet of charge is given by :

(A) $\dfrac{\sigma}{2\epsilon_o}$ (B) $\dfrac{2\sigma}{\epsilon_o}$ (C) $\dfrac{\epsilon_o}{\sigma}$ (D) $\dfrac{\sigma}{\epsilon_o}$

(5) An Electric Circuit in CRO that provides voltage to X plates is called :

(A) Tweet (B) Sweep (C) Sleep (D) Cheap

(6) The sum of positive and negative peak values of an A.C. Cycle is called :

(A) Instantaneous Value (B) Peak Value (C) P – P Value (D) rms Value

(7) Assembly of Coil and Cylinder is called : (A) Generator (B) Solenoid (C) Router (D) Armature

(8) One Henry is equal to : (A) $Vs^{-1}A$ (B) $Vs^{-1}A^{-1}$ (C) $Vs\ A^{-1}$ (D) VsA

(9) In Free Space , the speed of Electromagnetic Waves is :

(A) $332\ ms^{-1}$ (B) $3 \times 10^{8}\ ms^{-1}$ (C) $1.1 \times 10^{3}\ ms^{-1}$ (D) $2.6 \times 10^{4}\ ms^{-1}$

(10) Number of Diodes used in Full Wave (bridge) rectifier circuit are :

(A) 4 (B) 3 (C) 2 (D) 1

(11) The value of Potential Barrier for Silicon at room temperature is :

(A) 0.3 V (B) 0.5 V (C) 0.7 V (D) 0.9 V

(12) A Semi Conductor will behave as an insulator at temperature :

(A) 0 K (B) $0^{o}C$ (C) 10 K (D) $10^{o}C$

(13) Momentum of a Photon is given by : (A) $\dfrac{hf}{\lambda}$ (B) $\dfrac{h\lambda}{C}$ (C) $\dfrac{f\lambda}{C}$ (D) $\dfrac{hf\cdot}{C}$

(14) In a Nuclear Transmutation when Thorium is transformed into Protactinium, the emitted particle is : (A) A Beta Particle (B) A Neutron (C) A Proton (D) An Alpha Particle

(15) The energy required to completely remove an electron from the first Bohr Orbit is called :

(A) Excitation Energy (B) Ionization Energy (C) Potential Energy (D) Kinetic Energy

(16) A photon of Radio Wave has an energy of the order of :

(A) 10^{-16} eV (B) 10^{-10} eV (C) 1 eV (D) 1 KeV

(17) The temperature of the core of the sun is about :

(A) $5\ M^{o}C$ (B) $10\ M^{o}C$ (C) $20\ M^{o}C$ (D) $40\ M^{o}C$

Physics	(A)		L.K.No. 1312	Paper Code No. 8472
Paper II	(Objective Type)		Inter –A- 2019	(New Pattern)
Time :	20 Minutes		Inter (Part II)	Group 2nd
Marks :	17		Session (2015 -17) to (2017 – 19)	

Note : Four possible choices A , B , C ,D to each question are given. Which choice is correct fill that circle in front of that Question No. Use Marker or Pen to fill the circles. Cutting or filling two or more circles will result in Zero Mark in that Question.

Q.No.1	Photocopier and Inkjet Printer are the applications of :
(1)	(A) Magnetism (B) Electricity (C) Electrostatics (D) Electronics
(2)	Electroretinography is used for the diagnosis of abnormality in the :
	(A) Eyes (B) Ears (C) Throat (D) Heart
(3)	If Fourth Band is missing on Carbon Resistor, its Tolerance is :
	(A) ± 5 % (B) ± 20 % (C) ± 10 % (D) ± 30 %
(4)	The Magnetic Flux Density is measured in :
	(A) Weber (B) Weber / m^2 (C) Tesla / m^2 (D) Nm
(5)	Shunt Resistance is :
	(A) High Resistance (B) Zero Resistance (C) Infinite Resistance (D) Low Resistance
(6)	If the Motor is overloaded, then magnitude of back emf :
	(A) Increases (B) Decreases (C) Remains same (D) Becomes zero
(7)	Transformer is an Electrical Device used to change :
	(A) *Alternating Current* (B) *Direct Current* (C) *Alternating emf* (D) Voltage
(8)	During each cycle of A.C. Voltage reaches a peak value :
	(A) Once (B) Twice (C) Thrice (D) Four Times
(9)	Phase Difference between V and I of an A.C. through Resistor is :
	(A) Zero Degree (B) 90° (C) 180° (D) 270°
(10)	The Young's Modulus of Mercury is :
	(A) $70 \times 10^9 Nm^{-2}$ (B) $15 \times 10^9 Nm^{-2}$ (C) Zero (D) $91 \times 10^9 Nm^{-2}$
(11)	The thickness of Base in Transistor is of the order of :
	(A) $10^{-6} cm$ (B) $10^{-6} m$ (C) $10^6 m$ (D) $10^{-6} mm$
(12)	A Sensor of Light is : (A) Transistor (B) LED (C) Diode (D) LDR
(13)	The most refined form of Matter by de – Broglie is :
	(A) Smoke (B) Fog (C) Light (D) Protons
(14)	The existence of Positron was predicted by :
	(A) G.P. Thomson (B) Dirac (C) Germer (D) Newton
(15)	Balmer Series lies in the region of Electromagnetic :
	(A) Infrared (B) Far Infrared (C) Ultraviolet (D) Visible
(16)	The number of Neutrons present in the Nucleus is given by :
	(A) N = A - Z (B) N = A + Z (C) N = Z - A (D) N = A × Z
(17)	The S.I. Unit of Decay Constant is :
	(A) Second (B) Meter (C) (Second)$^{-1}$ (D) (Meter)$^{-1}$

Note : Four possible choices A , B , C , D to each question are given. Which choice is correct , fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

Q.No.1		
(1)	If the distance between two charges is halved and charges are also doubled, then force between them will be : (A) Two Times (B) Four Times (C) Eight Times (D) Sixteen Times	
(2)	Coulomb Per Volt is called : (A) Farad (B) Ampere (C) Joule (D) Henry	
(3)	What is the resistance of a carbon resistor which has bands brown , black and brown : (A) 100 Ohm (B) 1000 Ohm (C) 10 Ohm (D) 1.0 Ohm	
(4)	For a current carrying solenoid the term " n " has units as : (A) No Unit (B) m^{-1} (C) m^{-2} (D) m^{-3}	
(5)	One Tesla is equal to : (A) NmA^{-1} (B) $N^{-1}mA$ (C) $NA^{-1}m^{-1}$ (D) NAm	
(6)	If Motor is over-loaded, magnitude of back emf : (A) Increase (B) Decrease (C) Zero (D) Remains Constant	
(7)	One Henry is equal to : (A) VSA^{-1} (B) VSA^{-1} (C) $V^{-1}SA$ (D) VSA^{-1}	
(8)	In three phase A.C. Generator , Phase difference between each pair of the coil is : (A) 90° (B) 270° (C) 120° (D) 180°	
(9)	If the frequency of A.C. Supply is doubled then the reactance of the capacitor is : (A) Half (B) Two Times (C) Four Times (D) One Fourth	
(10)	The Curi Temperature of Iron is : (A) $125^{\circ}C$ (B) $163^{\circ}C$ (C) 750 K (D) $750^{\circ}C$	
(11)	Which one pair belongs to acceptor impurity : (A) Arsenic , Phosphorous (B) Boron , Gallium (C) Antimony , Indium (D) Arsenic , Antimony	
(12)	Thickness of a base in a transistor is of the order of : (A) 10^{-3} m (B) 10^{-9} m (C) 10^{-6} m (D) 10^{-6} mm	
(13)	The Boolean Equation for Exclusive OR Gate is given by : (A) $X = A \cdot B + B \cdot A$ (B) $X = A\overline{B} + \overline{A}B$ (C) $X = \overline{A} \cdot \overline{B} + A \cdot B$ (D) $X = \overline{A \cdot B + \overline{A}B}$	
(14)	The factor $\frac{h}{m_0 c}$ in the Compton Equation has the dimension of : (A) Pressure (B) Length (C) Mass (D) Momentum	
(15)	The Rest Mass Energy of an Electron Positron pair is : (A) 0.51 Mev (B) 1.02 Mev (C) 1.2 Mev (D) 1.00 Mev	
(16)	The first orbit in the Hydrogen Atom has a radius : (A) 5.3×10^{-11} m (B) 5.3×10^{11} m (C) 3.5×10^{-11} m (D) 3.5×10^{11} m	
(17)	A pair of quark and anti quark makes a : (A) Meson (B) Baryon (C) Lepton (D) Hadron	

OBJECTIVE

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero marks in that question.

QUESTION NO. 1 DGK–2–24

1. A test charge experiences force due to applied electric field
   (A) Parallel (B) Anti - Parallel (C) Perpendicular (D) Oblique

2. Unit +ve charge is placed over a spherical hollow surface, flux crossing it outwards is
   (A) $\dfrac{1}{\varepsilon_0}$ (B) Zero (C) $\dfrac{2}{\varepsilon_0}$ (D) $2\varepsilon_0$

3. Heat energy is converted to electrical energy by
   (A) Primary cells (B) Thermo-couples (C) Solar cells (D) Generators

4. A high speed graph plotting device is
   (A) Voltmeter (B) Galvanometer (C) Ammeter (D) C.R.O

5. Lamp and scale arrangement is used in galvanometers to measure deflection
   (A) Stable (B) Dead beat (C) Sensitive (D) Astatic

6. The behaviour is like resistors in alternating current
   (A) Capacitor (B) Motor (C) Inductor (D) Generator

7. A transformer with many secondary coils is used for
   (A) Door bell (B) TV receiver (C) Power transmission (D) Transistor radio

8. An alternating quantity can be represented by a
   (A) Static vector (B) Rotating vector (C) Scalar (D) Straight line

9. At resonance, the voltage of inductor and capacitor in series RLC circuit are
   (A) In phase (B) Out of phase (C) Perpendicular (D) Oblique

10. The reverse current to reduce the magnetization to zero is called
    (A) Retentive (B) Remanance (C) Coercive (D) Magnetization

11. A fast switching device responding in nano – seconds is
    (A) PN Junction (B) Photo diode (C) LED (D) Photo – voltaic cell

12. When output of non – inverting amplifier is fed back directly to inverting input, gain is
    (A) Zero (B) R_2/R_1 (C) One (D) $1 - \dfrac{R_2}{R_1}$

13. Second postulate of special theory of relativity is
    (A) Wrong (B) Virtual (C) Experimental fact (D) Sometimes correct

14. For low energy quanta, dominant properties are
    (A) Particle nature (B) Wave nature (C) Dual nature (D) Multi nature

15. Longest wavelength of Paschen series is (R_H = Rydberg's constant)
    (A) $9/R_H$ (B) $144/7R_H$ (C) $1/R_H$ (D) $400/9R_H$

16. For a radioactive sample of initial population N_0, decayed fraction after 4 half – lives is
    (A) $1/16$ (B) $1/4$ (C) $3/4$ (D) $15/16$

17. The energy output per nucleon in fusion is greater than energy output per nucleon in fission
    (A) 25 times (B) 6 to 7 times (C) 17 times (D) 200 times

PHYSICS　　　　　　　**OBJECTIVE**　　　　　TIME: 20 MINUTES
GROUP : FIRST　　　　　　　　　　　　　　　　MARKS: 17

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

QUESTION NO. 1　　　　DGK-12-1-23

1	SI units of capacitive reactance are
	(A) Farad　(B) Ohm　(C) Volt　(D) Ampere
2	Which of the following does not undergo plastic deformation ?
	(A) Glass　(B) Copper　(C) Wrought iron　(D) Lead
3	For full–wave rectification , number of diodes used in bridge circuit is
	(A) 3　(B) 2　(C) 4　(D) 1
4	The SI units of current gain are
	(A) Volts　(B) Ampere　(C) Weber　(D) No units
5	The Compton shift $\Delta\lambda$ is equal to Compton wave - length at an angle of
	(A) Zero　(B) 90°　(C) 45°　(D) 120°
6	A single quantum of electromagnetic radiation is called
	(A) Photon　(B) Meson　(C) Positron　(D) Quark
7	The reverse process of photo electric effect is called
	(A) Pair–production　　(B) Compton effect
	(C) Annihilation of matter　　(D) X–rays emission
8	Two down and one up quarks make
	(A) Proton　(B) Photon　(C) Neutron　(D) Deutron
9	One Joule of energy absorbed per Kilogram of body is
	(A) Rem　(B) Roentgens　(C) Grey　(D) Becquerel
10	The minimum charge on any object cannot be less than
	(A) 1.8×10^{-19} C　(B) 3.2×10^{-19} C　(C) 1.6×10^{-19} C　(D) 9.1×10^{-19} C
11	An electric field can deflect
	(A) Neutrons　(B) x–rays　(C) Gama–rays　(D) Alpha–rays
12	The SI units of the temperature coefficient of resistivity of a material are
	(A) Ohm–meter　(B) Kelvin　(C) Per Kelvin　(D) Ohm–Kelvin
13	Which has High resistance ?
	(A) Ohm–meter　(B) Ammeter　(C) Galvanometer　(D) Voltmeter
14	In order to increase the range of an ammeter , the shunt resistance is
	(A) Decreased　(B) Increased　(C) Kept constant　(D) Randomly changed
15	The self inductance is given by the relation
	(A) $NL = \emptyset I$　(B) $NI = L\emptyset$　(C) $N = L I \emptyset$　(D) $N \emptyset = L I$
16	If speed of a generator is doubled , the output voltage will be
	(A) Same　(B) One half　(C) Four times　(D) Double
17	The device which allows only the flow of D.C through a circuit is
	(A) Inductor　(B) Capacitor　(C) Transformer　(D) A.C generator

PHYSICS
TIME: 20 MINUTES

GROUP : SECOND   DGK-12-2-23   MARKS: 17

OBJECTIVE

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

QUESTION NO. 1

1	The slope of q-t graph at any instant of time gives
	(A) Charge (B) Voltage (C) Current (D) Frequency
2	Which one here is a ductile substance ?
	(A) Copper (B) Glass (C) Stone (D) Steel
3	In p-type semiconductor, the majority charge carrier are
	(A) Photons (B) Holes (C) Protons (D) Electrons
4	In reverse biasing a p-n-junction ideal, offers a resistance
	(A) Zero (B) Higher (C) Infinite (D) Medium
5	All motions are
	(A) Absolute (B) Uniform (C) Variable (D) Relative
6	In 1905, the theory of relativity was proposed by
	(A) Maxwell (B) Michelson (C) Einstein (D) de-Broglie
7	The radius of the 1st. Bohr orbit in hydrogen atom is
	(A) 8.8×10^{-12} cm (B) 0.53×10^{-10} cm (C) 9.1×10^{-31} cm (D) 1.6×10^{-31} cm
8	1 atomic mass unit (amu) is equal to
	(A) 1.66×10^{-24} kg (B) 1.66×10^{-19} kg (C) 1.66×10^{-34} kg (D) 1.66×10^{-27} kg
9	In nuclear radiations, the tracks of alpha-particles are
	(A) Thin (B) Continuous (C) Discontinuous (D) Eratic
10	The number of electrons in one coulomb charge is
	(A) 6.2×10^{18} (B) 1.6×10^{19} (C) 6.2×10^{21} (D) 1.6×10^{31}
11	The SI unit of relative permittivity of free space is
	(A) N/m (B) No units (C) Nm^2C^{-2} (D) $C^2N^{-1}m^{-2}$
12	The graphical representation of ohm's law is
	(A) Hyperbola (B) Ellipse (C) Parabola (D) Straight line
13	Energy stored per unit volume inside a solenoid is called as
	(A) Energy density (B) Electric flux (C) Charge density (D) Current density
14	A charge particle enters in a strong magnetic field, its K.E
	(A) Remains constant (B) Increases (C) Decreases (D) Increases than decreases
15	If we make magnetic field stronger, the value of induced current is
	(A) Decreased (B) Constant (C) Vanished (D) Increased
16	An alternating current is converted into direct current by a
	(A) Rectifier (B) Motor (C) Generator (D) Transformer
17	In A.C waveform , negative peak is obtained at the phase angle of
	(A) 90^0 (B) 120^0 (C) 270^0 (D) 360^0

PHYSICS

GROUP : FIRST

TIME: 20 MINUTES

MARKS: 17

OBJECTIVE

DGR - GI-22

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct , fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

QUESTION NO. 1

1	$\dfrac{\text{Second}}{\text{Ohm}}$ is equal to.
	(A) Coulomb (B) Farad (C) Joule (D) Ampere
2	S.I unit of electric flux is.
	(A) $N C^{-1}$ (B) $N.m^2.C^{-1}$ (C) $N.m.C^{-1}$ (D) $N.C^{-1}.m^2$
3	If there is a single black colour band around the body of a resistor, then the value of its resistance will be.
	(A) Zero ohm (B) 10 ohm (C) 100 ohm (D) Infinity
4	If 300 turns of wire are wound on 30cm length, then number of turns per unit length is
	(A) 10 (B) 20 (C) 100 (D) 1000
5	Which of the following is not accurate potential measuring device ?
	(A) Voltmeter (B) C.R.O (C) Potentiometer (D) Digital multimeter
6	The rod of unit length is moving at 30° through a magnetic field of 1T. If the velocity of rod is 1 m/s , then induced emf in the rod will be.
	(A) 1 V (B) 0.25 V (C) 0.5 V (D) 0.6 V
7	In alternating current circuit, inductors behave like.
	(A) Semi conductors (B) Resistors (C) Insulators (D) Conductors
8	Resistance of pure choke is.
	(A) Zero (B) Large (C) Very small (D) Infinite
9	The device which allows only the flow of D.C. is.
	(A) Capacitor (B) Transformer (C) Inductor (D) Generator
10	Curie temperature for iron is.
	(A) 1153 K (B) 1023 K (C) 750 K (D) 700 K
11	If $R_1 = 10\ k\Omega$ and $R_2 = 100\ k\Omega$, the gain of inverting amplifier is
	(A) -11 (B) -10 (C) 10 (D) 11
12	The open loop gain of op-amp is of the order of.
	(A) 10^2 (B) 10^3 (C) 10^4 (D) 10^5
13	0.1 Kg is equivalent to the energy of.
	(A) 9×10^{15} J (B) 9×10^{16} J (C) 6×10^{16} J (D) 3×10^8 J
14	The rest mass energy of an electron positron pair is.
	(A) 0.51 Mev (B) 1.02 Mev (C) 0.2 Mev (D) 1.51 Mev
15	First spectral series of hydrogen atom was identified by.
	(A) Lyman (B) Rydberg (C) Balmer (D) Paschen
16	Slow neutrons can cause fission in.
	(A) Uranium - 235 (B) Uranium - 238 (C) Neptonium (D) Lithium
17	Radio therapy is generally done with γ-rays emitted from.
	(A) Sodium - 24 (B) Cobalt - 60 (C) Iodine - 131 (D) Strontium - 90

PHYSICS
GROUP: SECOND

DGK-G2-22
OBJECTIVE

TIME: 20 MINUTES
MARKS: 17

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct , fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

QUESTION NO. 1

1	A charge of 4 C is in the field of intensity 4 N/C. the force on charge is
	(A) 1 N (B) 4 N (C) 8 N (D) 16 N
2	$\frac{Second}{ohm}$ is equal to
	(A) Farad (B) Coulomb (C) Joule (D) Ampere
3	5A current flows through a conductor in 2 minutes, the charge in the conductor is.
	(A) 10 C (B) 600 C (C) 400 C (D) 500 C
4	If current flowing through a solenoid becomes four times, then magnetic field inside it becomes.
	(A) Half (B) Two times (C) Three times (D) Four times
5	A 5m wire carrying current 2A at right angle to uniform magnetic field of 0.5 T. The force on the wire is.
	(A) 10 N (B) 5 N (C) 4 N (D) 2.5 N
6	Henry is equal to
	(A) VSA^{-1} (B) $VS^{-1}A$ (C) $V^{-1}SA$ (D) $V^{-1}S^{-1}A$
7	If step up transformer 100 % efficient, the primary and secondary windings would have the same
	(A) Current (B) Power (C) Voltage (D) Direction of winding
8	In R-L-C series circuit, the current at resonance frequency is
	(A) Zero (B) Minimum (C) Maximum (D) Infinite
9	The amplitude modulation transmission waves have frequencies range
	(A) 540 Hz to 1600 Hz (B) 540 M Hz to 1600 M Hz
	(C) 540 K Hz to 1600 K Hz (D) 540 Hz to 1600 K Hz
10	The Curi temperature for iron is
	(A) 125 °C (B) 163 °C (C) 750 K (D) 750 °C
11	Gain of inverting op-amplifier, if $R_1 = \infty$ and $R_2 = 1$
	(A) ∞ (B) +1 (C) -1 (D) 0
12	The p-n junction on forward biasing acts as
	(A) Capacitor (B) Inductor (C) High resistor (D) Low resistor
13	The unit of Plank's constant is
	(A) JC (B) J/C (C) JS (D) J/S
14	If temp. is doubled for a black body then energy radiated per second per unit area becomes.
	(A) 4 times (B) $\frac{1}{4}$ times (C) 16 times (D) $\frac{1}{16}$ times
15	The quantized radius of first Bohr orbit of Hydrogen atom is.
	(A) 0.053 nm (B) 0.053 m (C) 0.0053 nm (D) 0.53 nm
16	The dead time of G.M counter is
	(A) 10^{-3} second (B) 10^{-4} second (C) 10^{-6} second (D) 10^{-8} second
17	The temp. of core of sun is about
	(A) 50 M °C (B) 40 M °C (C) 20 M °C (D) 10 M °C

PHYSICS
GROUP : FIRST

TIME: 20 MINUTES
MARKS: 17

OBJECTIVE

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct , fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question

QUESTION NO. 1

1	A particle of charge 2 e falls through potential difference of 3.0 V will have energy
	(A) 1.5 eV (B) 0.66 eV (C) 6 eV (D) 12 eV
2	The minimum value of charge on free particle is
	(A) $\frac{2}{3}$ e (B) $\frac{1}{3}$ e (C) $\frac{-2}{3}$ e (D) e
3	The SI unit of conductance is
	(A) Siemen (B) Ohm (C) Henry (D) Weber
4	In the expression $\frac{e}{m} = \frac{V}{Br}$, the radius is measured by making electronic trajectory
	(A) Hyperbolic (B) Ellipse (C) Dark (D) Visible
5	Output waveform of built-in voltage of the CRO is
	(A) Sinusoidal (B) Square (C) Rectangular (D) Saw tooth
6	The Lenz's law is also a statement of law of conservation of
	(A) Charge (B) Parity (C) Mass (D) Energy
7	The principle of A.C generator is
	(A) Lenz's law (B) Faraday's law (C) Mutual induction (D) Coulomb's law
8	In A.C through resistance, current and voltage are
	(A) in phase (B) out of phase (C) current leads (D) 90° phase difference
9	The unit of $\frac{WL}{R}$ in R – L series circuit is
	(A) Ohm (B) Volt (C) Henry (D) Unitless
10	The most suitable metal for making permanent magnet is
	(A) Iron (B) Steel (C) Silver (D) Copper
11	Base of the transistor is very thin of the order of the
	(A) 10^{-6} m (B) 10^{-2} m (C) 10^{-1} m (D) 10^{-3} m
12	The operational amplifier, when works as inverting amplifier. The phase change between its input and output is
	(A) 90° (B) 120° (C) 150° (D) 180°
13	The factor $\frac{h}{m_0 c}$ has the unit of
	(A) Kilogram (B) Second (C) Meter (D) Joule
14	Which properties of radio waves are predominate ?
	(A) Wave (B) Particle (C) Partial wave (D) Partial particle
15	Finely focused beam of laser has been used to destroy
	(A) Crystal structure (B) Cancerous cells (C) Weapons (D) Germs
16	Baryon with combination of up , up and up quark has charge
	(A) 1 e (B) 2 e (C) – 1 e (D) – 2 e
17	$^{2}_{1}H + ^{2}_{1}H \longrightarrow ^{3}_{1}H + X + 4.0$ Mev. The particle X is
	(A) $^{1}_{0}n$ (B) $^{1}_{1}H$ (C) $^{2}_{1}H$ (D) electron

PHYSICS

GROUP : SECOND

DꞶK-II-21

OBJECTIVE

TIME: 20 MINUTES

MARKS: 17

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct , fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question

QUESTION NO. 1

1	The core of the transformer is laminated to reduce
	(A) Magnetic loss (B) Electric loss (C) Eddy current loss (D) Hysteresis loss
2	The capacitive reactance to a pure D.C is
	(A) Zero (B) Infinite (C) 2 Ohm (D) 3 Ohm
3	At resonance, the impedance of RLC series circuit is
	(A) Zero (B) Minimum (C) Maximum (D) Variable
4	Glass and high carbon steel are the example of
	(A) Ductile substance (B) Brittle substance (C) Soft substance (D) Magnetic substance
5	The colour of light emitting diode (LED) depends upon
	(A) The type of semiconductor material (B) The amount of forward current (C) Its forward Biasing (D) Its reverse Biasing
6	The voltage gain of an inverting operational amplifier is given by input and output is
	(A) $G = 1 - \frac{R_2}{R_1}$ (B) $G = 1 - \frac{R_1}{R_2}$ (C) $G = -\frac{R_1}{R_2}$ (D) $G = -\frac{R_2}{R_1}$
7	In order to increase the K.E of ejected photo-electron , there should be an increase in
	(A) Intensity of light (B) Wavelength of radiation (C) Frequency of radiation (D) Power of radiation
8	Which of the following phenomena proves the particle nature of light
	(A) Diffraction (B) Interference (C) Polarization (D) Photoelectric effect
9	X-rays has charge
	(A) Positive (B) Negative (C) Zero (D) As that of α–particle
10	The building block of protons and neutrons are called
	(A) Electron (B) Ions (C) Quarks (D) Positron
11	In nuclear fission reaction , when the products are $^{140}X_e$ and ^{94}Sr , the number of neutrons emitted are
	(A) 1 (B) 2 (C) 3 (D) 4
12	The charge on the oil droplet in Millikan's oil drop experiment calculated by using formula
	(A) $q = \frac{mg}{d}$ (B) $q = \frac{v}{mgd}$ (C) $q = \frac{mgd}{v}$ (D) $q = \frac{d}{mgv}$
13	One electron volt is equal to
	(A) $6.25 \times 10^{18} J$ (B) $6.25 \times 10^{-18} J$ (C) $1.6 \times 10^{-19} J$ (D) $1.6 \times 10^{19} J$
14	The substance having negative temperature co-efficient is
	(A) Carbon (B) Iron (C) Tungsten (D) Gold
15	The SI unit of magnetic flux is given by
	(A) NmA^{-1} (B) $NA^{-1}m^{-1}$ (C) Nm^2A^{-1} (D) $Nm^{-1}A$
16	When a charge is projected perpendicular to a uniform magnetic field, then its path followed will be
	(A) Straight line (B) Circle (C) Ellipse (D) Helix
17	If 10A current passes through 100 mH inductor, then energy stored is
	(A) 100 J (B) 5 J (C) 20 J (D) Zero

PHYSICS , GROUP FIRST
NEW COURSE
ACADEMIC SESSION : 2015 - 2017 TO 2017 - 2019

TIME: 20 MINUTES
MARKS: 17

OBJECTIVE

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct , fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question

QUESTION NO. 1

1	Photocopier and inkjet printer are the application of
	(A) Electricity (B) Electrostatics (C) Magnetism (D) Electromagnetism
2	Selenium is
	(A) Insulator (B) Photoconductor (C) Conductor (D) First insulator than conductor
3	Siemen is the unit of
	(A) Resistivity (B) Resistance (C) Conductivity (D) Conductance
4	The sensitivity of Galvanometer can be increased by
	(A) Decreasing the area of coil (B) Decreasing the number of turns of coil
	(C) Increasing the magnetic field (D) Using a fine suspension
5	If a charge at rest in a magnetic field then force on charges is
	(A) Zero (B) Maximum (C) $q(\overline{V} \times \overline{B})$ (D) $qVB \cos\theta$
6	Mutual induction has a practical role in performance of the
	(A) A.C. Generator (B) D.C Generator (C) Transformer (D) Radio choke
7	Henry is S.I unit of
	(A) Current (B) Resistance (C) Flux (D) Self inductance
8	In three phase voltage across any two lines is about
	(A) 220 V (B) 230 V (C) 400 V (D) 430 V
9	At high frequency ,the value of reactance of the capacitor in A.C. circuit is
	(A) Low (B) High (C) Zero (D) Medium
10	A device used to detect very weak magnetic field produced by brain is named as ?
	(A) MRI (B) CAT Scans (C) Squid (D) CRO
11	The size of base in transistor is
	(A) 10^{-9} m (B) 10^{-8} m (C) 10^{-7} m (D) 10^{-6} m
12	The potential barrier for germanium at room temperature is
	(A) 0.3 volt (B) 0.5 volt (C) 0.7 volt (D) 0.9 volt
13	Photo diode can turn its current on and off in
	(A) Micro-sec (B) Nano- sec (C) Pico - sec (D) Femto - sec
14	Joule second is the unit of
	(A) Energy (B) Wien's constant (C) Boyles law (D) Plank's constant
15	Photons emitted in inner shell transition are
	(A) Continuous X- rays (B) Discontinuous X- rays (C) Characteristic X- rays (D) Energetic X- rays
16	0.1 Kg mass will be equivalent to energy
	(A) 5×10^8 J (B) 9×10^{15} J (C) 6×10^{16} J (D) 9×10^{16} J
17	S.I unit of absorbed dose is
	(A) Gray (B) Roentgen (C) Curie (D) Rem

PHYSICS
GROUP SECOND (NEW COURSE)
ACADEMIC SESSION: 2015 - 2017 TO 2017 - 2019

TIME: 20 MINUTES
MARKS: 17

OBJECTIVE

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct , fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

QUESTION NO. 1

1	Equation $\phi = \overline{E} . \overline{A}$ is applicable to the surface (A) Cylindrical (B) Conical (C) Flat (D) Spherical
2	During danger the "eel" turns itself into a living battery then the potential difference between its head and tail can be up to (A) 160 V (B) 220 V (C) 440 V (D) 600 V
3	Electric coefficient is represented by (A) ϵ_o (B) ϵ_r (C) μ_o (D) μ_r
4	The SI unit of flux density is (A) Gauss (B) Tesla (C) weber / meter (D) weber
5	The brightness of spot on CRO screen is controlled by (A) Anode (B) Cathode (C) Grid (D) plates
6	A transformer steps 220 V to 40 V , If the secondary turns are 40 and then primary turns are (A) 20 (B) 40 (C) 120 (D) 220
7	The loss of energy over each A.C.cycle magnetization and demagnetization of transformer core is called as (A) Electric current (B) Electronic current (C) Eddy current (D) Conventional current
8	At high frequency, the current through a capacitor of A.C. circuit will (A) Zero (B) Small (C) Large (D) Infinity
9	Which of the following waves do not travel at the speed of light (A) Radio waves (B) X-rays (C) Sound waves (D) Heat waves
10	Domains contain nearly (A) 10^8 to 10^9 atoms (B) 10^{12} to 10^{16} atoms (C) 10^{15} to 10^{20} atoms (D) 10^{25} to 10^{30} atoms
11	Photovoltaic cell is formed from (A) Arsenic (B) Carbon (C) Germanium (D) Silicon
12	The gain of an inverting amplifier of external resistances $R_1 = 10 \, K\Omega$ and $R_2 = 100 \, K\Omega$ is (A) -10 (B) -5 (C) -2 (D) 5
13	The wave-length of emitted radiation of maximum intensity is inversely proportional to the absolute temperature. This is known as (A) Faraday's law (B) Rayleigh Jean's law (C) Stefan's law (D) Wien's displacement law
14	Photoelectric effect shows (A) Corpuscular nature of light (B) Dual nature of light (C) Electromagnetic nature of light (D) Wave nature of light
15	The diameter of an atom is of order of (A) 10^{-8} m (B) 10^{-10} m (C) 10^{-12} m (D) 10^{-14} m
16	The specially designed solid state detector can be used to detect (A) α-rays only (B) β-rays only (C) γ-rays only (D) X-rays only
17	A pair of quark and antiquark makes a (A) baryon (B) lepton (C) muon (D) meson

PAPER CODE - 8471

DGIK -41-12-18   (12ᵗʰ CLASS – 12018)

PHYSICS
GROUP FIRST (NEW COURSE)   TIME: 20 MINUTES
ACADEMIC SESSION : 2015-17 to 2016-18   MARKS: 17
                    OBJECTIVE

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct , fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question

QUESTION NO. 1

1	If time constant in RC Circuit is small, than the capacitor is charged or discharged. (A) Slowly (B) Rapidly (C) At constant rate (D) intermittently
2	Gauss's law can only be applied to (A) A curved surface (B) A flat surface (C) A surface of any shape (D) A closed surface
3	The maximum power is delivered to a load resistance 'R' when the internal resistance of the source is (A) Zero (B) Infinite (C) Equal to 'R' (D) Equal to $\frac{R}{2}$
4	The magnetic force on an electron, travelling at 10^6 m/s parallel to the field of strength 1 Weber /m² is (A) 10^{-12} N (B) Zero (C) 10^3 N (D) 16×10^{-12} N
5	The sensitivity of a galvanometer can be increased by: (A) Decreasing the area of coil (B) Decreasing the number of turns (C) Increasing the diameter of suspension wire (D) Increasing the magnetic field
6	Lens's law deals with the (A) Magnitude of induced current (B) Direction of induced current (C) Direction of induced emf (D) Magnitude of induced emf
7	Transformer is used to change (A) Electrical power (B) Electrical energy (C) Magnetic field (D) Alternating voltage
8	In a resonance circuit of frequency 1000 KHz with inductor of 5mH, the capacitance will be (A) 10.1 pF (B) 8.16 pF (C) 3.3 pF (D) 5.09 pF
9	The most suitable metal for making permanent magnet is (A) Iron (B) Aluminium (C) Steel (D) Copper
10	Which component of the transistor has greater concentration of impurity? (A) Base (B) Emitter (C) Collector (D) both emitter and collector
11	$X = \overline{A \cdot B}$ is the mathematical notation for (A) NAND gate (B) NOR gate (C) OR gate (D) AND gate
12	In Compton scattering ,the value of Compton's shift is equal to Compton's wavelength, when X-rays is scattered at angle of (A) 0° (B) 30° (C) 60° (D) 90°
13	The physical quantity ,related to photon, that does not change in compton scattering is (A) Energy (B) Speed (C) Frequency (D) Wavelength
14	An electron in H-atom is excited from ground state to n = 4. How many spectral lines are possible in this case ? (A) 6 (B) 5 (C) 4 (D) 3
15	The meta-stable state is………… than normal excited state. (A) 10^{-5} times larger (B) 10^{-8} times smaller (C) 10^5 times larger (D) 10^{-3} times larger
16	The particles which do not experience strong force are called (A) baryons (B) hadrons (C) mesons (D) leptons
17	The force which is responsible for the breaking up of the radioactive element, is (A) Weak nuclear force (B) Strong nuclear force (C) Electromagnetic force (D) Gravitational force

PHYSICS

SECOND GROUP (NEW COURSE)

ACADEMIC SESSION: 2015-17 to 2016-18

TIME: 20 MINUTES

MARKS: 17

OBJECTIVE

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct , fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

QUESTION NO. 1

1	Identify the practical application of electrostatic force is			
	(A) Inkjet printer	(B) X - rays	(C) Laser	(D) A.C. generator
2	Product of resistance and capacitance is			
	(A) Velocity	(B) Force	(C) Acceleration	(D) Time
3	Kirchhoff's second rule is based on			
	(A) Energy conservation	(B) Mass conservation		
	(C) Charge conservation	(D) Momentum conservation		
4	Two parallel wires carrying current in the same direction			
	(A) Repel each other	(B) Have no effect upon each other		
	(C) Attract each other	(D) Cancel each other effect		
5	If the motor is overloaded then magnitude of back e m f			
	(A) Increase	(B) decrease	(C) Zero	(D) Remains constant
6	Choke consumes extremely small			
	(A) Current	(B) Charge	(C) Power	(D) Potential
7	Metal detector consists of			
	(A) L C circuit	(B) R L circuit	(C) R C circuit	(D) R L C series circuit
8	Good conductor have Conductivities of the order of			
	(A) 10^{-7} $(\Omega\,m)^{-1}$	(B) 10^{7} $(\Omega\,m)^{-1}$	(C) 10^{2} $(\Omega\,m)^{-1}$	(D) 10^{-2} $(\Omega\,m)^{-1}$
9	The Curi temperature of iron is			
	(A) 125 °C	(B) 163 °C	(C) 750 K	(D) 750 °C
10	The Boolean equation for exclusive NOR gate is given by			
	(A) $X = AB + BA$	(B) $X = A\overline{B} + \overline{B}A$	(C) $X = \overline{A\overline{B} + \overline{B}A}$	(D) $X = \overline{A\overline{B} + \overline{A}B}$
11	The potential barrier for silicon at room temperature			
	(A) 0.7 volt	(B) 0.3 volt	(C) 5 volt	(D) 1 volt
12	When platinum wire is heated it becomes orange at			
	(A) 500 °C	(B) 900 °C	(C) 1100 °C	(D) 1300 °C
13	1 Kg mass will be equivalent to energy			
	(A) 9×10^{12} j	(B) 9×10^{16} j	(C) 9×10^{20} j	(D) 9×10^{8} j
14	The value of Rydbergs constant is			
	(A) 1.0974×10^{7} m	(B) 1.0974×10^{-7} m^{-1}	(C) 1.0974×10^{7} m^{-1}	(D) 1.0974×10^{8} m^{-1}
15	Balmer series lies in			
	(A) Infrared region	(B) Visible region		
	(C) Ultraviolet region	(D) Far ultraviolet region		
16	The Y-rays emitted from radioactive element have speed			
	(A) 1×10^{7} m s^{-1}	(B) 1×10^{8} m s^{-1}	(C) 3×10^{8} m s^{-1}	(D) 4×10^{9} m s^{-1}
17	The dead time for G.M Counter is of the order of			
	(A) 10^{-1} S	(B) 10^{-2} S	(C) 10^{-3} S	(D) 10^{-4} S

Physics (Objective) (GROUP-I) Time: 20 Minutes Marks : 17

Note: Write Answers to the Questions on the objective answer sheet provided. Four possible answers A, B, C and D to each question are given. Which answer you consider correct, fill the corresponding circle A, B, C or D given in front of each question with Marker or Pen ink on the answer sheet provided.

RWP–1–24

1.1 One henry is equal to:

(A) $V S^{-1} A^{-1}$ (B) $V S A^{-1}$ (C) $V S^{-1} A$ (D) $V^{-1} S A$

2. When motor is overloaded, the magnitude of back emf is:

(A) Constant (B) Increases (C) Decreases (D) Infinite

3. In capacitor circuit phase between current and charge is:

(A) Parallel (B) In phase (C) Anti parallel (D) Out of phase

4. At resonance frequency the impedence of RLC series circuit is:

(A) Minimum (B) Maximum (C) Both (A) and (B) (D) Infinite

5. Which has least hysteresis loop area?

(A) Soft iron (B) Steel (C) Wrought iron (D) Cobalt

6. During negative half cycle of A.C. , $p - n$ junction has:

(A) Low resistance (B) No resistance (C) High resistance (D) Remain same

7. Device which converts low voltage or current to high voltage or current is:

(A) Rectifier (B) Transformer (C) Inductor (D) Amplifier

8. The momentum of photon is represented by the equation:

(A) $p = mv$ (B) $p = \dfrac{h}{\lambda}$ (C) $p = \dfrac{\lambda}{h}$ (D) $p = h\lambda$

9. The energy needed by photon to create electron-positron pair is:

(A) $1.02\ MeV$ (B) $0.52\ MeV$ (C) $0.051\ MeV$ (D) $1.51\ MeV$

10. Bremsstrauhlung radiations are example of:

(A) Molecular spectra (B) Atomic spectra (C) Continuous spectra (D) Discrete spectra

11. 1 rem is equal to:

(A) $0.1\ SV$ (B) $0.01\ SV$ (C) $2.04\ SV$ (D) $3.06\ SV$

12. Radiotherapy is generally done with γ-rays emitted from:

(A) Iodine-131 (B) Strontium-90 (C) Sodium-24 (D) Cobalt-60

13. Charge on the Droplet can be calculated by:

(A) $q = \dfrac{mg}{vd}$ (B) $q = \dfrac{v}{mgd}$ (C) $q = \dfrac{mgd}{v}$ (D) $q = \dfrac{d}{mgd}$

14. If the distance between two charges is halved, Force becomes:

(A) One fourth (B) Four times (C) Half (D) Double

15. The minimum power is delivered to across the resistor R, when:

(A) $r = \infty$ (B) $r = 0$ (C) $r = R$ (D) $r = {R}/{4}$

16. A positive charge is moving away from observer. Direction of magnetic induction will be:

(A) Anticlockwise (B) Towards right (C) Towards left (D) Clockwise

17. Shunt resistance is:

(A) Low resistance (B) High resistance (C) Zero resistance (D) Impedence

Physics (Objective)   (GROUP-II)   Time: 20 Minutes   Marks : 1

RWP-2-24

Note: Write Answers to the Questions on the objective answer sheet provided. Four possible answers A, B, C and D to each question are given. Whic answer you consider correct, fill the corresponding circle A, B, C or D given in front of each question with Marker or Pen ink on the answer sheet provided.

1.1 The rest mass of photon is:
 (A) $Zero$ (B) $1.67 \times 10^{-27} kg$ (C) $1.67 \times 10^{-31} kg$ (D) $9.1 \times 10^{-31} kg$

2. X-rays are also known as:
 (A) Cathode rays (B) Positive rays (C) r-rays (D) Alpha rays

3. The atomic number of $\frac{141}{56}$ Ba is:
 (A) 141 (B) 56 (C) 85 (D) 92

4. One unified mass scale (1U) is equal to:
 (A) $1.66 \times 10^{-19} kg$ (B) $1.66 \times 10^{-27} kg$ (C) $1.66 \times 10^{-31} kg$ (D) $1.66 \times 10^{-28} kg$

5. Value of dielectric constant for vacuum is:
 (A) Less than 1 (B) Greater than 1 (C) One (D) 1.5

6. Gold band on resistor represent its tolerance equal to:
 (A) $\pm10\%$ (B) $\pm5\%$ (C) $\pm15\%$ (D) $\pm20\%$

7. An apparatus placed within a metal enclosure is "shielded" from:
 (A) Electric field (B) Magnetic field C) Gravitational field (D) Electromagnetic field

8 The SI unit of magnetic induction is:
 (A) Weber (B) Tesla (C) Newton (D) Joule

9. The sensitivity of Galvanometer can be increased by decreasing:
 (A) C/BAN (B) B/ACN (C) CB/AN (D) NC/AB

10. The minus sign in Faraday's law of electromagnetic induction shows that the direction of induced emf is such that it opposes the change in:
 (A) Electric flux (B) Electromagnetic flux (C) Gravitational flux (D) Magnetic flux

11. The emf induced in a generator is:
 (A) $N\omega AB Sin\theta$ (B) $N\omega IB Sin\theta$ (C) $NAB Sin\theta$ (D) $N\omega B Sin\theta$

12. If I_0 is the peak value of A.C current, its average value over a complete cycle is:
 (A) $\sqrt{2} I_0$ (B) $I_0 /\sqrt{2}$ (C) $\sqrt{\frac{I_0}{2}}$ (D) Zero

13. The value of angular frequency "ω" is equivalent to:
 (A) $2\pi T$ (B) $4\pi f$ (C) $2\pi f$ (D) πf

14. Based on the geometrical structure and arrangement of atoms, there are ____ crystal systems:
 (A) 6 (B) 5 (C) 7 (D) 8

15. The potential barrier for the Ge^n at room temperature is:
 (A) 0.7 v (B) 1.0 v (C) 0.6 v (D) 0.3 v

16. The mathematical notation for exclusive OR-operation is:
 (A) $X = \overline{A + B}$ (B) $X = A \overline{B} + B \overline{A}$ (C) $X = \overline{AB + BA}$ (D) $X = \overline{A - B}$

17. The photoelectric effect explained by:
 (A) Darission (B) Gerwer (C) Hertz (D) Einstein

627-12-A

☆☆☆☆☆
Roll No ___ to be filled in by the candidate

(For All Sessions)

Physics (Objective) Rup-12-1-23 (Group-I)

Time: 20 Minutes   Marks : 17

Note: Write Answers to the Questions on the objective answer sheet provided. Four possible answers A, B, C and D to each question are given. Which answer you consider correct, fill the corresponding circle A, B, C or D given in front of each question with Marker or Pen ink on the answer sheet provided.

1.1. The basic circuit element in a D.C circuit is:

(A) Capacitor   (B) Inductor   (C) Battery   (D) Resistor

2. The critical temperature of mercury is:

(A) 4.2 k   (B) 1.18 k   (C) 3.72 k   (D) 7.2 k

3. The open loop gain of op-amplifier is of the order of:

(A) 10^2 (B) 10^3 (C) 10^5 (D) 10^4

4. $X = A + B$ is the mathematical notation for:

(A) AND gate   (B) OR gate   (C) NOR gate   (D) NAND gate

5. The momentum of a moving photon is:

(A) $P = h / \lambda$ (B) $P = \lambda / h$ (C) $P = hf$ (D) $P = mc^2$

6. Pair production can take place by using:

(A) $X - rays$ (B) $\propto - rays$ (C) $\beta - rays$ (D) $\gamma - rays$

7. The value of Ryd berg's constant is:

(A) $1.0974 \times 10^7 m^{-1}$ (B) $1.0974 \times 10^{-7} m^{-1}$ (C) $1.0974 \times 10^{-7} m$ (D) $1.0974 \times 10^7 m$

8. Half life of uranium -238 is:

(A) 4.5×10^{12} years   (B) 4.5×10^{11} years   (C) 4.5×10^{10} years   (D) 4.5×10^9 years

9. The potential difference between anode and cathode in a neon bromine filled G.M counter is:

(A) 200 v   (B) 300 v   (C) 400 v   (D) 220 v

10. The number of electron in one coulomb charge is:

(A) 6.2×10^{18} (B) 1.6×10^{-19} (C) 6.2×10^{21} (D) 1.6×10^{-27}

11. The S-1 unit of electric flux is:

(A) Nmc^{-1} (B) $Nm^2 c^{-1}$ (C) $Nm^2 c$ (D) $Nm^{-2} c^{-1}$

12. A rheostat can be used as:

(A) Transformer   (B) Amplifier   (C) Oscilator   (D) Potential divider

13. Lorentz force is known as:

(A) $\vec{F} = I(\vec{L} \times \vec{B})$ (B) $\vec{F} = q(\vec{v} \times \vec{B})$ (C) $\vec{F} = q\vec{E} + q(\vec{v} \times \vec{B})$ (D) $\vec{F} = q\vec{E}$

14. DMM stands for:

(A) Digital millimeter   (B) Digital multimeter   (C) Digital measuring meter   (D) Digital ammeter

15. When the back emf in a circuit is zero it draws:

(A) Zero current   (B) Steady average current   (C) Minimum current   (D) Maximum current

16. The principle of AC generator is based on:

(A) Mutual induction   (B) Self induction   (C) Electromagnetic induction   (D) All of these

17. The graph between A.C voltage with time is:

(A) Cosine curve   (B) Tangent curve   (C) Sine curve   (D) Cot curve

★★★
Roll No _____ to be filled in by the candidate

(For All Sessions)

Physics (Objective) Rwp-12-2-23 (Group-II)

Time: 20 Minutes   Marks: 17

Note: Write Answers to the Questions on the objective answer sheet provided. Four possible answers A, B, C and D to each question are given. Which answer you consider correct, fill the corresponding circle A, B, C or D given in front of each question with Marker or Pen ink on the answer sheet provided.

1.1. LDR becomes necessary when op-amplifier is used as:

(A) Comparator (B) Rectifier (C) Inverter (D) Night switch

2. If velocity of body becomes equal to 'C' then its mass becomes:

(A) 0 kg (B) $m = m_0$ (C) $m \to \infty$ (D) $m = {m_0}/{2}$

3. Which one is low energy photon?

(A) Visible light (B) Infrared light (C) Ultraviolet light (D) x-ray

4. In Helium – Neon Laser, the percentage of Helium is:

(A) 75% (B) 65% (C) 60% (D) 85%

5. The number of neutron present in the nucleus is given by:

(A) $N = A - Z$ (B) $N = A + Z$ (C) $N = Z - A$ (D) $N = A \times Z$

6. The binding energy per nucleon is maximum for:

(A) Radium (B) Polonium (C) Iron (D) Helium

7. Electric flux through a closed surface depends upon:

(A) Charge (B) Medium (C) Charge & Medium (D) Geometry

8. The negative of potential gradient is:

(A) Electrostatic force (B) Electric field intensity (C) Potential difference (D) Electromotive force

9. Charge carrier in electrolyte are:

(A) Positive & negative ion (B) Protons (C) Electron (D) Holes

10. The sum of electric and magnetic force is called:

(A) Maxwell force (B) Lorentz force (C) Newton force (D) Centripetal force

11. Current passing through the coil of galvanometer is:

(A) $\dfrac{CN\theta}{BA}$ (B) $\dfrac{NAB\theta}{C}$ (C) $\dfrac{AN}{BC}$ (D) $\dfrac{C\theta}{BAN}$

12. Induced emf can be increased by:

(A) Increase resistance of coil (B) Decrease resistance of coil (C) Increase number of turns (D) Decrease magnetic flux

13. The working principle of transformer is:

(A) Self induction (B) Faraday Law (C) Mutual induction (D) Electromagnetic induction

14. The wave form of alternating voltage is a:

(A) Sine curve (B) Tan curve (C) Cotangent curve (D) Cosine curve

15. The main advantage of use of A.C is:

(A) Minimum line losses (B) Long distance (C) Step up to required voltage (D) Step up to required current

16. Which of the following does not go plastic deformation:

(A) Copper (B) Wrought iron (C) Lead (D) Glass

17. The output voltage of rectifier is:

(A) Smooth (B) Pulsating (C) Perfectly direct (D) Alternating

Roll No. _____ to be filled in by the candidate.

Inter. (Part-II)-A-2022
(For all Sessions)

Paper Code | 8 | 4 | 7 | 3

Physics (Objective Type)

Time: 20 Minutes   Group-I   Rwp-91-22 Marks:17

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two more circles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave others blank.

1.

1. An A.C voltmeter has rms value 220 V, its peak value is _____ .

   (A) 300 V   (B) 210 V   (C) zero   (D) 311.12 V

2. For higher frequency, the inductive reactance will be _____ .

   (A) high   (B) low   (C) zero   (D) infinite

3. At 0 K, semiconductor is _____ .

   (A) conductor   (B) insulator

   (C) perfect insulator   (D) perfect diamagnetic and paramagnetic

4. A PN junction cannot be used as _____ .

   (A) amplifier   (B) capacitor   (C) rectifier   (D) light emitting diod

5. The portion of the transistor with greater concentration is _____ .

   (A) base   (B) collector   (C) emitter   (D) insulator

6. The maximum energy of photo-electron depends upon _____ .

   (A) frequency   (B) intensity   (C) power   (D) illumination

7. Compton shift in wavelength is zero when scattering angle of photon is _____ .

   (A) 30° (B) 60° (C) 0° (D) 90°

8. In population inversion, atoms can reside in metastable state for _____ .

   (A) 10^{-10} sec   (B) 10^{-3} sec   (C) 10^{-8} sec   (D) 10^{-12} sec

9. The percentage of original quantity of radioactive material left after five half-lives is nearly _____ .

   (A) 6%   (B) 5%   (C) 10%   (D) 3%

10. Which of the following is used as moderator is nuclear reactor?

   (A) heavy water   (B) boron   (C) cadmium   (D) aluminum

11. If the distance between charges is halved and each charge is also doubled, then the force between two changes becomes _____ times.

   (A) two   (B) sixteen   (C) eight   (D) four

12. The force between two charges is 36 N and if the dielectric constant 3.6 value is inserted, then force reduces to _____ .

   (A) zero   (B) 72 N   (C) 25 N   (D) 10 N

13. A thermistor with positive temperature of co-efficient is heated then its resistance will _____ .

   (A) decrease   (B) increase   (C) not be affected   (D) become half

14. The magnetic force on a neutron in the magnetic field of 10 T is _____ .

   (A) zero   (B) 1.6×10^{-18} N   (C) 100 N   (D) 1.6×10^{-19} N

15. A charge particle cannot be accelerated in _____ field.

   (A) electric   (B) gravitational   (C) magnetic   (D) scalar

16. The energy stored in the inductor becomes four times if _____ .

   (A) self-inductance is doubled   (B) current is doubled

   (C) both inductance and current are doubled   (D) current is halved

17. Which type of energy is stored in inductor?

   (A) electric energy   (B) magnetic energy   (C) potential energy   (D) gravitational energy

Physics (Objective Type)

Time: 20 Minutes   RwP-G2-22

Group-II

Marks:17

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave others blank.

1. 1. Which one is not a ductile material?
   (A) lead   (B) copper   (C) steel   (D) iron

   2. Open loop gain of operational amplifier is of the order of _____ .
   (A) 10^6 (B) 10^3 (C) 10^7 (D) 10^5

   3. Gain of inverting amplifier with external resistance $R_1 = 10\,k\,\Omega$ and $R_2 = 100\,k\,\Omega$, is given as _____ .
   (A) -10 (B) 10 (C) -100 (D) 100

   4. All motions are _____ .
   (A) absolute   (B) uniform   (C) relative   (D) variable

   5. If an object moves with the speed of light, its mass will be _____ .
   (A) zero   (B) maximum   (C) infinity   (D) minimum

   6. Which of the following has the largest de Broglie wavelength at same speed?
   (A) proton   (B) α – particles   (C) carbon atom   (D) electron

   7. The dead time of G.M tube is _____ .
   (A) 10^{-3} sec   (B) 10^{-6} sec   (C) 10^{-4} sec   (D) 10^{-8} sec

   8. Slow neutrons can cause fission in _____ .
   (A) uranium - 238   (B) uranium - 235   (C) neptunium   (D) lithium

   9. SI unit of electric flux is _____ .
   (A) $N\,m^2\,C^{-1}$ (B) $N\,m^2\,C$ (C) $N\,m^{-1}\,C^{-1}$ (D) NC^{-1}

   10. A proton is moved from low potential to high potential between two points having potential difference of 1 volt energy gained by proton is _____ .
   (A) 1 ev   (B) 2 ev   (C) 1.6×10^{-19} ev   (D) 1.6 ev

   11. A rheostat can be used as _____ .
   (A) potential divider   (B) variable resistance   (C) amplifier   (D) both (A) & (B)

   12. Magnetic field due to current carrying straight varies as _____ .
   (A) $\dfrac{1}{r^2}$ (B) r^2 (C) $\dfrac{1}{r}$ (D) r

   13. Charge to mass ratio of neutron is _____ .
   (A) zero   (B) $9.53 \times 10^9\,C\,kg^{-1}$ (C) $1.758 \times 10^4\,C\,kg^{-1}$ (D) $1.775 \times 10^{-11}\,C\,kg^{-1}$

   14. The motional emf depends upon _____ .
   (A) length of conductor   (B) magnetic field   (C) speed   (D) all of these

   15. Lenz's law is the manifestation of conservation of _____ .
   (A) current   (B) voltage   (C) energy   (D) all of these

   16. The reactance of an inductor is given as _____ .
   (A) ωL (B) $\dfrac{1}{\omega L}$ (C) $\dfrac{\omega}{L}$ (D) $\dfrac{L}{\omega}$

   17. The reactance of an inductor increases with increase in _____ .
   (A) frequency   (B) voltage   (C) resistance   (D) capacitance

☆

Roll No. ~~24188~~ *to be filled in by the candidate.*

(For all sessions)

| Paper Code | 8 | 4 | 7 | 1 |

Physics (Objective Type)

RWP-21

Time: 20 Minutes

Marks: 17

NOTE: Write answers to the questions on objective answer sheet provided. Four possible answers A,B,C & D to each question are given. Which answer you consider correct, fill the corresponding circle A,B,C or D given in front of each question with Marker or pen ink on the answer sheet provided.

1.1. Unit of electric flux is:

(A) Nm^2C^{-2} (B) Nm^2C^{-1} (C) $N^{-1}m^2C^{-1}$ (D) $Nm^{-2}C$

2. The statement $\Phi_e = \dfrac{1}{\varepsilon_c}Q$ was given by:

(A) Faraday (B) Dersted (C) Gauss (D) Coulomb

3. Reciprocal of resistance is:

(A) Capacitance (B) Conductance (C) Inductance (D) Resistance

4. Lorentz force is given by:

(A) $\vec{F} = \vec{I}(\vec{L}\times\vec{B})$ (B) $\vec{F} = q(\vec{V}\times\vec{B})$ (C) $\vec{F} = q\vec{E}+q(\vec{V}\times\vec{B})$ (D) $\vec{F} = q\vec{E}$

5. A power line 10m high carries a current 200A. The magnetic field of the wire at the ground is:

(A) $4\times10^{-6}T$ (B) $40\times10^{-6}T$ (C) $4\times10^{-4}T$ (D) $4\times10^{-3}T$

6. Relation for energy density in case of an inductor is:

(A) $\dfrac{B^2}{2\mu_o}$ (B) $\dfrac{\mu_o}{2B^2}$ (C) $\dfrac{B}{2\mu_o}$ (D) $\dfrac{B}{2\mu_o^2}$

7. The Lenz's law is also a statement of:

(A) Law of conservation of momentum (B) Law of conservation of charge

(C) Law of conservation of energy (D) Faraday's law

8. Peak to Peak value of an alternating voltage is:

(A) $2V_o$ (B) 0 (C) $\dfrac{V_o}{\sqrt{2}}$ (D) V_o

9. In RLC series resonance circuit, the condition for resonance is:

(A) $X_L=X_c$ (B) $X_L<X_c$ (C) $X_L>X_c$ (D) $X_L>Z$

10. Young's modulus of lead is:

(A) $1.5\times10^{19}Nm^{-2}$ (B) $7.7\times10^9Nm^{-2}$ (C) $5.6\times10^9Nm^{-2}$ (D) $2.2\times10^9Nm^{-2}$

11. Number of diodes used in half wave rectifier is:

(A) 4 (B) 3 (C) 2 (D) 1

12. S.I unit of current gain of transistor is:

(A) Coulomb (B) Ampere (C) Farad (D) No unit

13. When platinum wire is heated, it appears cherry red at:

(A) 1300°C (B) 1100°C (C) 900°C (D) 500°C

14. The value of Wein's constant is:

(A) 2.9×10^3mK (B) $2.9\times10^{-3}mK$ (C) $2.9mK$ (D) $2.9\times10^{-2}mK$

15. In Helium-Neon laser, the value of Helium is:

(A) 85% (B) 75% (C) 65% (D) 60%

16. Half life of Uranium-238 is:

(A) 4.5×10^{12} years (B) 4.5×10^{11} years (C) 4.5×10^{10} years (D) 4.5×10^9 years

17. The dead time of the counter is:

(A) $\sim10^{-7}S$ (B) $\sim10^{-6}S$ (C) $\sim10^{-5}S$ (D) $\sim10^{-4}S$

☆☆☆☆

Roll No. 762490 to be filled in by the candidate.

Inter. (Part-II) A-2013

(For all sessions)

Paper Code | 8 | 4 | 7 | 7

RWP-12-19

Physics (Objective Type)

Time: 20 Minutes   Marks: 17

NOTE: Write answers to the questions on objective answer sheet provided. Four possible answers A,B,C & D to each question are given. Which answer you consider correct, fill the corresponding circle A,B,C or D given in front of each question with Marker or pen ink on the answer sheet provided.

1.1. In RLC series circuit, at higher frequencies:

(A) $X_L=X_C$ (B) $X_L>X_C$ (C) $X_L<X_C$ (D) $X_L=0$

2. Which one belongs to trivalent group?

(A) Aluminium   (B) Antimoney   (C) Phosphorous   (D) Arsenic

3. Colour of light emitted by LED depends upon:

(A) its forward biasing   (B) its reverse biasing   (C) type of material   (D) forward current

4. At low temperature, a body emits radiations of:

(A) shorter wavelength   (B) longer wavelength   (C) high frequency   (D) high frequency & shorter wavelength

5. The shortest wavelength in Lyman series is equal to:

(A) R_H (B) $\frac{R_H}{2}$ (C) $\frac{1}{R_H}$ (D) $\frac{2}{3}R_H$

6. In the reaction, $X + {}^{17}_{8}O \rightarrow {}^{14}_{7}N + {}^{4}_{2}H$, X is:

(A) ${}^{1}_{1}H$ (B) ${}^{2}_{1}H$ (C) ${}^{0}_{0}e$ (D) ${}^{0}_{0}e$

7. If the charges are doubled and the distance between them is also doubled, then Coulomb's force will be:

(A) double   (B) halved   (C) remains same   (D) four times

8. A rubber ball of radius 2cm has a charge of $5\mu c$ on its surface, which is uniformly distributed, the value of E at its centre is:

(A) $10NC^{-1}$ (B) Zero   (C) $2.5 NC^{-1}$ (D) $5\times10^{-6}NC^{-1}$

9. Which one of the following relation is correct?

(A) joule=volt x ampere   (B) joule=coulomb / volt   (C) joule=volt / ampere   (D) joule=coulomb x volt

10. In carbon resistors, which colour band indicates the tolerance of $\pm10\%$?

(A) White   (B) Silver   (C) Gold   (D) Violet

11. For an open circuit, terminal potential difference Vt is:

(A) Vt=2emf   (B) Vt=emf   (C) Vt>emf   (D) Vt<emf

12. An electron travelling at 10^6m/s enters parallel in a magnetic field of 1 tesla, the magnetic force acting on it is:

(A) Zero   (B) 10^{-12}N   (C) 10^3N   (D) 1.6×10^{-13}N

13. When a charged particle is projected opposite to the direction of magnetic field, it experiences a force equal to:

(A) $quB\cos\theta$ (B) $quB\sin90$ (C) quB   (D) zero

14. In order to increase the range of voltmeter R_H is:

(A) increased   (B) decreased   (C) unchanged   (D) increased by 4 times

15. Which device permits the flow of D.C?

(A) Capacitor   (B) Photocell   (C) Inductor   (D) transformer

16. For an ideal step up transformer:

(A) $N_p>N_s$ (B) $V_sI_s>V_pI_p$ (C) $V_s<V_p$ (D) $I_s<I_p$

17. When a metal detector comes close to a metal then its frequecy:

(A) becomes double   (B) remains same   (C) becomes half   (D) increases

Physics (Objective Type)

Sessions: 2015-2017 & 2016-2018

Rwp-12-18

Time: 20 Minutes

Marks: 17

NOTE: Write answers to the questions on objective answer sheet provided. Four possible answers A,B,C & D to each question are given.Which answer you consider correct, fill the corresponding circle A,B,C or D given in front of each question with Marker or pen ink on the answer sheet provided.

1.1. Maximum compton shift is observed at:

(A) $0°$ (B) $90°$ (C) $180°$ (D) $45°$

2. Bremsstrahlung radiations are example of:

(A) Atomic spectra   (B) Molecular spectra   (C) Continuous spectra   (D) Discrete spectra

3. What is different in isotopes?

(A) number of protons   (B) number of neutrons   (C) number of electrons   (D) Charge number

4. Circulation of blood is studied by radio isotope:

(A) carbon-14   (B) carbon-12   (C) cobalt-60   (D) sodium-24

5. if electric lines of force are equally spaced the electric field is:

(A) uniform   (B) non-uniform   (C) weak   (D) strong

6. Drum of Photocopier is made of:

(A) Copper   (B) Toner   (C) Selenium   (D) Aluminium

7. Magnetic effect of current is used in:

(A) Toaster   (B) Electric motor   (C) Electric iron   (D) D.C battery

8. Two current carrying parallel conductors are lying in same direction, they.

(A) form magnetic dipole   (B) attract each other   (C) repel each other   (D) have no effect

9. If current flowing through a solenoid becomes four times, then magnetic field inside it becomes:

(A) two times   (B) three times   (C) four times   (D) half

10. In A.C,inductor behaves as:

(A) Capacitor   (B) Resistor   (C) Commutators   (D) Transistor

11 . In A.C generator when plane of coil is perpendicular to the magnetic field, then output of generator is:

(A) NWAB   (B) $2\pi f$ (C) maximum   (D) zero

12. In metal detectors, we use:

(A) RL circuit   (B) RC circuit   (C) LC circuit   (D) any of these

13. In frequency modulation, which factor is changed?

(A) Amplitude of carrier waves   (B) Frequency of carrier wave

(C) Amplitude of signal   (D) Frequency of signal

14. A material which is insulator at OK and conduct at room temperature is:

(A) Silver   (B) Lead   (C) Germanium   (D) Polythene

15. Doping is made compartively larger in:

(A) emitter   (B) base   (C) collector   (D) P-type semi-conductors

16. In put resistance of op-amplifier is of the order of:

(A) Few ohms   (B) Mega ohms   (C) Milli ohms   (D) Micro ohms

17. Light of 4.5ev is incident on a cesium surface and stoping potential is 0.25V, maximum K.E of emitted electrons is:

(A) 4.5 ev   (B) 4.25 ev   (C) 4.75 ev   (D) 0.25 ev

Physics (Objective)   SGD-2-24 (Group II)   Paper (II)

Time Allowed:- 20 minutes   **PAPER CODE 4472**   Maximum Marks:- 17

Note:- You have four choices for each objective type question as A, B, C and D. The choice which you think is correct; fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question. Write **PAPER CODE**, which is printed on this question paper, on the both sides of the Answer Sheet and fill bubbles accordingly, otherwise the student will be responsible for the situation. Use of Ink Remover or white correcting fluid is not allowed.

Q. 1

1) If the distance between two point charge is halved, the electric intensity becomes
   (A) Half   (B) $\frac{1}{4}$ times   (C) Double   (D) 4 times

2) Current which flows from high potential to low potential is
   (A) Electric current   (B) Conventional current   (C) Eddy current   (D) Remain constant

3) The value of permeability of free space is
   (A) $4\pi \times 10^{-9} WbA^{-1}m^{-1}$ (B) $4\pi \times 10^{-7} WbA^{-1}m^{-1}$ (C) $4\pi \times 10^{-10} WbA^{-1}m^{-1}$ (D) $4\pi \times 10^{7} WbA^{-1}m^{-1}$

4) Lenz's law applies on
   (A) Magnitude of emf   (B) Direction of emf   (C) Direction of induced current   (D) Resistance

5) The mean value of A.C in a cycle is
   (A) 1   (B) 0   (C) I_o (D) $\frac{I_o}{\sqrt{2}}$

6) Which one is a ductile substance.
   (A) Glass   (B) Wood   (C) Lead   (D) Oxygen

7) Reverse current flows due to
   (A) Majority charge carrier   (B) Minority charge carrier   (C) Electrons   (D) Holes

8) Earth orbital speed is
   (A) 10 km/s   (B) 20 km/s   (C) 30 km/s   (D) 40 km/s

9) Which of the series of hydrogen atom lies in ultraviolet region
   (A) Laymen series   (B) Balmer series   (C) Paschen series   (D) Bracket series

10) The binding energy per nucleon is maximum for
   (A) Helium   (B) Iron   (C) Polonium   (D) Radium

11) Which one is photo conductor
   (A) Copper   (B) Selenium   (C) Mercury   (D) Aluminium

12) If the length and turns of a solenoid is doubled, strength of magnetic field will be
   (A) Doubled   (B) Half   (C) Constant   (D) Four times

13) Energy stored in inductor is
   (A) $\frac{1}{2}LI^2$ (B) $\frac{1}{2}LI$ (C) $\frac{1}{2}L^2I$ (D) $\frac{1}{2}L^2I^2$

14) In case of A.C through resistor, voltage and current are
   (A) 0^0 (B) 90^0 (C) 180^0 (D) 270^0

15) A diode characteristic curve is plotted between
   (A) Current and Resistance   (B) Voltage and Time   (C) Voltage and current   (D) Current and Time

16) At low temperature, Body emitts radiation of
   (A) Short wavelength   (B) Long wavelength   (C) High frequency   (D) Both (A) and (C)

17) Which one is not affected by Electric and magnetic field.
   (A) β – rays   (B) γ – rays   (C) α – rays   (D) Electrons

Note:- *You have four choices for each objective type question as A, B, C and D. The choice which you think is correct; fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question. Write **PAPER CODE**, which is printed on this question paper, on the both sides of the Answer Sheet and fill bubbles accordingly, otherwise the student will be responsible for the situation. Use of Ink Remover or white correcting fluid is not allowed.*

Q. 1

1) A spectrum of radiation is which the quantity being studied, such as frequency or energy takes discrete value is called _____ spectra.
   (A) Band   (B) None   (C) Continuous   (D) Discrete

2) The particles greater in mass that protons are called
   (A) Mesons   (B) Baryons   (C) Bosons   (D) Nucleons

3) Moderator in fission process slow down the fast neutrons and make it easy to produce fission is
   (A) Uranium-235   (B) Thorium-223   (C) Natural Uranium (D) Uranium 239

4) Two opposite point charge of same magnitude separated by distance "2d", electric potential midway between them is.
   (A) 1 V   (B) 2 V   (C) Zero   (D) $V/2$

5) Electron volt (eV) is the unit of.
   (A) Potential   (B) Electric field (C) Energy   (D) Charge

6) The SI unit of temperature co-efficient of resistivity is
   (A) C^{o-1} (B) F^{o-1} (C) $K^{-1}m$ (D) K^{-1}

7) A galvanometer can be made sensitve by.
   (A) Using a small and thick suspension   (B) Decreasing the area of coil   (C) Increasing the magnetic field   (D) Decreasing the turn of coil

   (A) Circular   (B) Spiral   (C) Helix   (D) Ellipse

9) The principle of an electric generator is based on.
   (A) Coulomb's Law (B) Faraday's Law of Electro magnetic Induction   (C) Ampere's Law   (D) Lenz's Law

10) The SI unit of mutual induction is
    (A) $Vs^{-1}A^{-1}$ (B) VsA^{-1} (C) Henry   (D) Both (B) & (C)

11) An expression for capacitive reactance is given by.
    (A) $X_c = \dfrac{1}{2\pi fC}$ (B) $X_c = \dfrac{1}{2\pi f}$ (C) $X_c = 2\pi fC$ (D) $X_c = 2\pi fL$

12) At what frequency will an inductor of 1.0 H have a reactance of 500 Ω?
    (A) 90 Hz   (B) 100 Hz   (C) 80 Hz   (D) 110 Hz

13) The electrical resistance of mercury disappears suddenly as the temperature is reduced
    (A) Above 4.2 K   (B) Below 4.2 K   (C) To 4.2 K   (D) 7.1 K

14) In P-type material, the majority charge carriers are
    (A) Electrons   (B) Protons   (C) No charge   (D) Holes

15) The output of two input OR Gate is "0" only when its.
    (A) Both inputs are "0"   (B) Either input is "1"   (C) Both input are "1"   (D) Either input is "0"

16) The mass "m" of a moving object with speed 0.8c is.
    (A) $0.66 m_o$ (B) $0.97 m_o$ (C) $1.67 m_o$ (D) $1.08 m_o$

17) In compton effect the wavelength of Scattered $X-rays$ is___ than the wavelength of incident $X-rays$.
    (A) Smaller   (B) Larger   (C) Same order   (D) All of these

1223 Warning:- Please write your Roll No. in the space provided and sign. Roll No--------------------
(Inter Part – II)   (Session 2019-21 to 2021-23)   Sig. of Student --------------------
Physics   (Objective) SGD-12-2-23 (Group II)   Paper (II)
Time Allowed:- 20 minutes   **PAPER CODE 4476**   Maximum Marks:- 17

Note:- You have four choices for each objective type question as A, B, C and D. The choice which you think is correct; fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question. Write **PAPER CODE**, which is printed on this question paper, on the both sides of the Answer Sheet and fill bubbles accordingly, otherwise the student will be responsible for the situation. Use of Ink Remover or white correcting fluid is not allowed.

Q. 1

1) Isotopes of Xenon are:
   (A) 12   (B) 24   (C) 36   (D) 37
2) Binding energy per nucleon is maximum for
   (A) Uranium   (B) Gold   (C) Silver   (D) Iron
3) The value of relative permitivity of air is close to
   (A) Vacuum   (B) Paraffined paper   (C) Teflon   (D) Transformer oil
4) The electric flux through any close surface is depending on
   (A) Shape of close surface   (B) Medium   (C) Size of close surface   (D) Location of charge
5) Thermo-couples convert heat energy into
   (A) Wind energy   (B) Potential energy   (C) Nuclear energy   (D) Electrical energy
6) The value of permitivity of free space is
   (A) $4\pi \times 10^{-7} WbA^{-1}m^{-1}$ (B) $\pi \times 10^{-7} WbA^{-1}m^{-1}$ (C) $2\pi \times 10^{-7} WbA^{-1}m^{-1}$ (D) $2\pi r \times 10^{-7} WbA^{-1}m^{-1}$
7) The magnetic field inside the current carrying long solenoid is
   (A) Strong   (B) Weak   (C) Zero   (D) Uniform

   (A) Maximum   (B) Zero   (C) Minimum   (D) 3V

9) Lenz's law is called as the law of conservation of
   (A) Charge   (B) Parity   (C) Momentum   (D) Energy
10) Direct current cannot pass through
   (A) Inductor   (B) Resistor   (C) Chock   (D) Capacitor
11) The expression for inductive reactance is
   (A) ωL (B) $\dfrac{2\pi L}{f}$ (C) $\dfrac{1}{\omega L}$ (D) TL
12) The critical temperature of mercury is .
   (A) 1.18 K   (B) 4.2 K   (C) 3.72 K   (D) 7.2 K
13) Actual movement across the diode Junction is due to
   (A) Holes   (B) Ions   (C) Protons   (D) Electrons
14) At the junction of diode, where no charge carrier is present is called
   (A) Active region   (B) Depletion region   (C) Saturated region   (D) Forbidden region
15) Which one explain particle nature of light
   (A) Interference   (B) Diffraction   (C) Polarization   (D) Photoelectric effect
16) Who gave the idea of matter waves
   (A) Einslein   (B) Huygen   (C) De-Broglie   (D) Newton
17) Electron cannot be resided in the nucleus, it can be proved by
   (A) Photoelectric effect   (B) Pair production   (C) Uncertainty principle   (D) De-Broglie Hypothesis

(Inter Part – II)   (Session 2018-20 to 2020-22)   Sig. of Student ——————

Physics (Objective)   (Group II) S.O 92-22   Paper (II)

Time Allowed:- 20 minutes   **PAPER CODE 4478**   Maximum Marks:- 17

Note:- You have four choices for each objective type question as A, B, C and D. The choice which you think is correct; fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question. Write **PAPER CODE**, which is printed on this question paper, on the both sides of the Answer Sheet and fill bubbles accordingly, otherwise the student will be responsible for the situation. Use of Ink Remover or white correcting fluid is not allowed.

Q. 1

1) Production of X-rays is the reverse process of
   (A) Photoelectric effect (B) Compton effect (C) Inhalation (D) Pair Production

2) The Binding energy for Helium is given by
   (A) 30.2 MeV (B) 2.25 MeV (C) 2.28 MeV (D) 28.2 MeV

3) After two half-lives the number of decayed nuclei of an element are
   (A) N/4 (B) N/2 (C) 3N/4 (D) N

4) Photo copier and injek printer are the application of :
   (A) Magnetism (B) Electricity (C) Electro magnetism (D) Electro static

5) SI unit of electric flux is:
   (A) $Nm^2 c^{-1}$ (B) Nmc^{-1} (C) $Nm^{-1} c^{-1}$ (D) $Nm^3 c^{-2}$

6) When the internal resistance of source is equal to the load maximum power dissipated is
   (A) $E/4r$ (B) $E/4r^2$ (C) $E^2/4r$ (D) $E^2/4r^2$

7) Unit of magnetic flux density is
   (A) $wb\, m^{-2}$ (B) $N\, A^{-1}\, m^{-1}$ (C) Tesla (D) All of above

8) When a charge is projected perpendicular to uniform magnetic field its path is:
   (A) Spiral (B) Circular (C) Helix (D) Ellipse

9) If the angular frequency of A.C Generator increased to double, the time period would become
   (A) Half (B) Double (C) 4 Times (D) $\frac{1}{4}$ Times

10) "Eddy current" are set up in a direction:
   (A) parallel to flux (B) anti parallel to flux (C) at 45° to flux (D) perpendicular to the flux

11) When effective value of current is 10. What is its peak value?
   (A) 10 (B) 14.2 (C) 12 (D) 13

12) Which are the Substance called _____ which undergo plastic deformation until they break.
   (A) Brittle (B) Ductile (C) Amorphous (D) Polymeric

13) Choke consumes extremly small.
   (A) Current (B) Charge (C) Power (D) Potential

14) The size of base in a transistor is
   (A) $10^{-6}\, m$ (B) $10^{-8}\, m$ (C) $10^{-7}\, m$ (D) 10 m

15) _____ is the building block of every complex electronic circuit.
   (A) Resistor (B) Capacitor (C) Amplifier (D) Diode

16) The unit of work function is
   (A) volt (B) joule (C) watt (D) Farad

17) Compton's Shift will be maximum at the angle of
   (A) 90° (B) 360° (C) 180° (D) 60°

1222 Warning:- Please write your Roll No. in the space provided and sign. Roll No.------------------

(Inter Part – II) (Session 2018-20 to 2020-22) Sig. of Student ----------------

Physics (Objective) **(Group I)** SGA-GI-22 Paper (II)

Time Allowed:- 20 minutes **PAPER CODE 4471** Maximum Marks:- 17

Note:- You have four choices for each objective type question as A, B, C and D. The choice which you think is correct; fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question. Write **PAPER CODE**, which is printed on this question paper, on the both sides of the Answer Sheet and fill bubbles accordingly, otherwise the student will be responsible for the situation. Use of Ink Remover or white correcting fluid is not allowed.

Q. 1

1) A rubber ball of radius 2 cm has a charge of 5 μc on its surface, which is uniformly distributed. The value of E at its Centre is
   (A) 10 NC^{-1} (B) Zero (C) 2.5 NC^{-1} (D) 5×10^{-6} NC^{-1}

2) The minimum value of charge on free particle is
   (A) $\frac{2}{3}e$ (B) $\frac{1}{3}e$ (C) $\frac{-2}{3}e$ (D) e

3) During danger the 'eel' turn itself into a living battery. Then the potential difference between its head and tail can be upto
   (A) 600 V (B) 440 V (C) 220 V (D) 160 V

4) The sum of electric and magnetic force is called
   (A) Maxwell force (B) Newton's force (C) Lorentz force (D) Centripetal force

5) Output waveform of sweep or time base generator is
   (A) Saw tooth wave (B) Digital wave (C) Sinusoidal wave (D) Square wave

6) Emf is induced due to change in
   (A) Electric flux (B) Magnetic flux (C) Electric potential (D) Electric current

7) When the motor is just started, its back emf is
   (A) Maximum (B) Minimum (C) Almost zero (D) Equal to current

8) An A.C Voltmeter reads 220V, its peak value will be
   (A) 255 V (B) 311.12 V (C) 300 V (D) 200 V

9) When we acclerate the charge, which type of waves are produced?
   (A) Mechanical waves (B) Travelling waves (C) Stationary waves (D) Electromagnetic waves

10) A device used to detect very weak magnetic fields produced by brain is named as
    (A) MRI (B) CAT Scans (C) SQUIDS (D) C.R.O

11) The magnitude of voltage gain of an amplifier having r_{ie}=1 ohm, β =100 and R_c=200 ohm is
    (A) 2000 (B) 1000 (C) 500 (D) 5

12) Which one is used as temperature sensor in electrical circuit?
    (A) Capacitor (B) diode (C) LDR (D) Thermistor

13) The rest mass of photon is
    (A) infinite (B) zero (C) 1.6 × 10^{-27} kg (D) 3 × 10^8 kg

14) The materialization of energy takes place in the process of
    (A) photoelectric effect (B) Compton effect (C) Pair Production (D) Annihilation of matter

15) The unit of Rydberg's constant R_H is
    (A) ms^{-1} (B) m (C) m^2 (D) m^{-1}

16) The unit of decay constant is
    (A) Second (B) (Second)$^{-1}$ (C) m^{-1} (D) m.K

17) Half life of radioactive isotope of Iodine-131 is
    (A) 6 days (B) 8 days (C) 10 days (D) 12 days

Warning:- Please write your Roll No. in the space provided and sign.   Roll No----------
(Inter Part – II)   (Session 2017-19 to 2019-21)   Sig. of Student ------------
Physics   (Objective)   (Group II)   S40-II-21 Paper (II)
Time Allowed:- 20 minutes   PAPER CODE 4478   Maximum Marks:- 17

Note:- You have four choices for each objective type question as A, B, C and D. The choice which you think is correct; fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question. Write PAPER CODE, which is printed on this question paper, on the both sides of the Answer Sheet and fill bubbles accordingly, otherwise the student will be responsible for the situation. Use of Ink Remover or white correcting fluid is not allowed.

Q. 1

1) In the Bohr's model of hydrogen atom, the lowest orbit corresponds to
   (A) Infinite energy   (B) Zero energy   (C) Minimum energy   (D) Maximum energy

2) Which of the following conservation law hold in nuclear transmutation.
   (A) Mass   (B) Energy   (C) Momentum   (D) All of these

3) The building blocks of protons and neutrons are
   (A) Ions   (B) Electrons   (C) Positrons   (D) Quarks

4) The energy density in a capacitor is directly proportional to
   (A) $\varepsilon_o \varepsilon_r$ (B) E^2 (C) C^2 (D) V^2

5) The negative sign in the expression of potential gradiant $\vec{E} = -\dfrac{\Delta \vec{V}}{\Delta r}$ shows that, direction of $\vec{E}$ is along.
   (A) Increasing potential   (B) Decreasing potential   (C) Increasing strength   (D) Negative potential

6) Colour code of 10 Ω resistance with 5% tolerance is
   (A) Black, black, Brown, Silver   (B) Brown, black, black, Gold   (C) Black, brown, black, Gold   (D) Brown, brown, black, Gold

7) The brightness of spot on C.R.O screen is controlled by
   (A) Anodes   (B) Cathodes   (C) Grid   (D) Plates

8) Magnetic flux density at a point due to current carrying coil is determined by
   (A) Ampere's Law   (B) Gauss's Law   (C) Faraday's Law   (D) Lenz's Law

9) The direction of induced current is always so as to oppose the change which causes the current is
   (A) Faraday's Law   (B) Lenz's Law   (C) Ohm's Law   (D) Kirchhoff's Ist rule

10) When current flowing through an inductor is doubled, then energy stored in it becomes.
    (A) Half   (B) Four times   (C) One fourth   (D) Double

11) In RLC series circuit, the current at resonance frequency is
    (A) Minimum   (B) Maximum   (C) Zero   (D) Infinite

12) When 10 V are applied to an A.C circuit, the current flowing in it is 100 mA, its impedance is
    (A) 50 Ω (B) 75 Ω (C) 100 Ω (D) 90 Ω

13) If stress is increased beyond the elastic limit of a material, it becomes permanently changed, this behaviour of material is called.
    (A) Elasticity   (B) Plasticity   (C) Yield strength   (D) Ultimate tensile strength

14) The potential barrier of silicon at room temperature is
    (A) 0.3 V   (B) 0.7 V   (C) 3.0 V   (D) 7.0 V

15) The voltage gain of an amplifier having $r_{ie} = 1\Omega$, $\beta = 100$, $R_c = 20\Omega$ is
    (A) 2000   (B) 1000   (C) 500   (D) 5

16) When a photon collide with an electron, which of following of photon increases.
    (A) Frequency   (B) Energy   (C) Wave length   (D) Mass

17) Which of the following explain particle nature of light?
    (A) Interference   (B) Diffraction   (C) Photoelectric effect   (D) Polarization

Physics (Objective)   (Group I)   Paper (II)
Time Allowed:- 20 minutes   **PAPER CODE 4475**   Maximum Marks:- 17

Note:- You have four choices for each objective type question as A, B, C and D. The choice which you think is correct; fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question. Write **PAPER CODE**, which is printed on this question paper, on the both sides of the Answer Sheet and fill bubbles accordingly, otherwise the student will be responsible for the situation. Use of Ink Remover or white correcting fluid is not allowed.

Q. 1

1) Types of quarks are
   (A) 2   (B) 4   (C) 6   (D) 8

2) In liquid metal fast breeder reactor the type of uranium used is
   (A) $^{235}_{92}U$ (B) $^{238}_{92}U$ (C) $^{234}_{92}U$ (D) $^{239}_{92}U$

3) The force between two charges is 28 N. The paraffin wax of relative permitivity 2.8 is introduced between the charges as medium then force reduces to
   (A) 25 N   (B) 20 N   (C) 10 N   (D) 15 N

4) A charge of $10^{-10} C$ between two parallel plates 1 cm apart experience a force of $10^{-5} N$. The p.d. between the plates is
   (A) 10 V   (B) 10^2 V   (C) 10^3 V   (D) 10^4 V

5) Tolerance for silver colour is
   (A) ±10%   (B) ±15%   (C) ±20%   (D) ±5%

6) Two parallel wires carrying currents in opposite direction.
   (A) Repel each other   (B) Attract each other   (C) Neither attract nor repel   (D) Stick to each other

7) A 5m wire carrying current 2 A at right angle to uniform magnetic field of 0.5 T. The force on the wire is
   (A) 1.5 N   (B) 5 N   (C) 2.5 N   (D) 4 N

8) If the coil is wound on iron core, the flux through it
   (A) Decreases   (B) Becomes zero   (C) Remains constant   (D) Increases

9) Energy stored per unit volume in magnetic field is called
   (A) Energy density   (B) Electric flux   (C) Work   (D) Power

10) S.I unit of reactance is
    (A) Farad   (B) Volt   (C) Ampere   (D) Ohm

11) The device which allows only the flow of D.C. is
    (A) Capacitor   (B) Resistor   (C) Inductor   (D) Generator

12) A vacant or partially filled band is called
    (A) Fermi Band   (B) Valence Band   (C) Forbidden Band   (D) Conduction Band

13) For normal operation of transistor, the Emitter-Base junction is always
    (A) Forward Biased   (B) Reverse Biased   (C) Unbiased   (D) Grounded

14) The S.I unit of current gain is
    (A) Volt   (B) Ampere   (C) Coulomb   (D) No unit

15) The factor $\frac{h}{m_o c}$ in Compton effect has the dimensions of
    (A) Pressure   (B) Length   (C) Mass   (D) Momentum

16) The materialization of energy takes place in the process of
    (A) Photoelectric effect (B) Compton effect   (C) Pair production   (D) Annihilation of matter

17) Joule-Second is the unit of
    (A) Energy   (B) Heat   (C) Plank's constant   (D) Power

1219 Warning:- Please write your Roll No. in the space provided and sign. Roll No----------------

(Inter Part – II) (Session. 2015-17 to 2017-19) Sig. of Student ----------------

Physics (Objective) (Group II) Paper (II)

Time Allowed:- 20 minutes **PAPER CODE 4472** Maximum Marks:- 17

Note:- You have four choices for each objective type question as A, B, C and D. The choice which you think is correct; fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question. Write **PAPER CODE**, which is printed on this question paper, on the both sides of the Answer Sheet and fill bubbles accordingly, otherwise the student will be responsible for the situation. Use of Ink Remover or white correcting fluid is not allowed.

Q. 1

1) If the distance between two charges is halved, the force between them becomes
   (A) Double (B) Half (C) Four times (D) One time

2) When some dielectric is inserted between the plates of a capacitor then capacitance.
   (A) Increased (B) Decreased (C) Zero (D) Infinity

3) Kirchhoff's First Rule is a manifestation of Law of conservation of
   (A) Mass (B) Energy (C) Charge (D) Momentum

4) Work done on a charge particle moving in a uniform magnetic field is
   (A) Maximum (B) Zero (C) Minimum (D) Negative

5) Output wave form of sweep or time base generator is
   (A) Saw tooth wave (B) Digital wave (C) Sinusoidal wave (D) Square wave

6) Energy stored in inductor is
   (A) $\frac{1}{2} LI$ (B) $\frac{1}{2} L^2 I$ (C) $\frac{1}{2} L^2 I^2$ (D) $\frac{1}{2} LI^2$

7) Which one is not present in A.C generator.
   (A) Armature (B) Magnet (C) Slip rings (D) Commutator

8) At high frequency the value of reactance of capacitor is
   (A) Small (B) Zero (C) Large (D) Infinite

9) In three phase A.C generator the phase difference between each pair of coil is
   (A) $45°$ (B) $60°$ (C) $90°$ (D) $120°$

10) The substance in which atoms cooperate with each other in such a way, so as to exhibit a strong magnetic field is called
    (A) Paramagnetic (B) Diamagnetic (C) Ferro magnetic (D) Non magnetic

11) A sensor of light is
    (A) Transistor (B) LED (C) Diode (D) Light dependent resistance

12) Find the gain of inverting amplifier of external resistance $R_1 = 10 K\Omega$ and $R_2 = 100 K\Omega$
    (A) -5 (B) -10 (C) -2 (D) 50

13) The value of Stefen's constant is
    (A) $2.9 \times 10^{-3} mK$ (B) $1.097 \times 10^{7} m^{-1}$ (C) $6.63 \times 10^{-34} Js$ (D) $5.67 \times 10^{-8} Wm^{-2} K^{-4}$

14) The factor $\frac{h}{m_o c}$ has the dimension of
    (A) Length (B) Time (C) Mass (D) Energy

15) Which series lies in the ultra violet region
    (A) Balmer series (B) Bracket series (C) Pfund series (D) Lyman series

16) Absorbed dose D is defined as
    (A) m/E (B) E/m (C) C/m (D) E/C

17) A proton consists of quarks which are
    (A) 2 up and 1 down (B) 1 up and 2 down (C) All up (D) All down

(Inter Part – II)   (Session 2015-17 & 2016-18)   Sig. of Student ----------------

Physics   (Objective)   (Group I)   Paper (II)

Time Allowed:- 20 minutes   **PAPER CODE 4477**   Maximum Marks:- 17

Note:- You have four choices for each objective type question as A, B, C and D. The choice which you think is correct; fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question. Write **PAPER CODE**, which is printed on this question paper, on the both sides of the Answer Sheet and fill bubbles accordingly, otherwise the student will be responsible for the situation. Use of Ink Remover or white correcting fluid is not allowed.

Q. 1

1) The reverse current through a semi conductor diode is due to
   (A) Minority carriers (B) Majority carriers   (C) Holes   (D) Electrons

2) Amount of energy released due to complete conversion of 1 Kg mass into energy is
   (A) $9 \times 10^{16} J$ (B) $9 \times 10^{9} J$ (C) $9 \times 10^{20} J$ (D) $3 \times 10^{8} J$

3) The momentum of photon of frequency ' f ' is
   (A) hc / f   (B) hf / c   (C) f / hc   (D) c / hf

4) An A.C. voltmeter reads 220 V, its peak value will be
   (A) 255 V   (B) 311.12 V   (C) 300 V   (D) 200 V

5) In an electronic transition atom cannot emit
   (A) Infrared radiation   (B) Ultra violet   (C) $\gamma - ray$ (D) Visible light
                              radiation

6) The number of neutron present in a nucleus is given by
   (A) N = A + Z   (B) N = A – Z   (C) N = Z – A   (D) N = A × Z

7) The amount of energy equivalent to 1 a.m.u. is
   (A) 9.315 MeV   (B) 93.15 MeV   (C) 931.00 MeV   (D) 0.931 MeV

8) If electric and gravitational forces on an electron balance each other, then electric intensity will be
   (A) $E = \dfrac{mg}{q}$ (B) $E = \dfrac{q}{mg}$ (C) $E = \dfrac{F_e}{q}$ (D) $E = \dfrac{1}{4\pi \epsilon_o} \dfrac{q}{r^2}$

9) A charge of 4 Coulomb is in the field of intensity 4 N/C. The force on the charge is
   (A) 8 N   (B) 16 N   (C) 4 N   (D) 1 N

10) The reciprocal of resistance is called
   (A) Reactance   (B) Inductance   (C) Conductance   (D) Conductivity

11) The force on current carrying conductor placed in magnetic field is expressed by
   (A) $\vec{F} = I \vec{L} \cdot \vec{B}$ (B) $\vec{F} = I \vec{L} \times \vec{B}$ (C) $\vec{F} = I^2 \vec{L} \times \vec{B}$ (D) $\vec{F} = I \vec{B} \times \vec{L}$

12) Two parallel wires carrying currents in opposite direction
   (A) Repel each other   (B) Attract each other   (C) Neither attract nor   (D) Stick to each other
                                                       repel each other

13) Lenz's law is in accordance with the law of conservation of
   (A) Momentum   (B) Angular   (C) Charge   (D) Energy
                          Momentum

14) Which of the following converts electrical energy into mechanical energy?
   (A) Transformer   (B) Motor   (C) D.C. generator   (D) A.C. generator

15) S.I. unit of reactance is
   (A) Farad   (B) Volt   (C) Ampere   (D) Ohm

16) If stress is increased beyond the elastic limit of material, it becomes permanently changed, this behaviour of material is called
   (A) Elasticity   (B) Plasticity   (C) Yield Strength   (D) Ultimate tensile
                                                                                Strength

17) The potential barrier for silicon is
   (A) 0.3 V   (B) 0.7 V   (C) 1.0 V   (D) 0.1 V

Note: - You have four choices for each objective type question as A, B, C and D. The choice which you think is correct;
fill that circle in front of that question number in your answer book. Use marker or pen to fill the circles. Cutting or
filling up two or more circles will result no mark.

SECTION–A

Q.1	Questions	A	B	C	D
1.	In Helium-Neon Laser, the discharge tube is filled with:	80 % He	85 % He	90 % He	95 % He
2.	The quantity $\dfrac{h}{m_o c}$ has dimensions of:	Mass	Time	Length	Energy
3.	If the energy of a photon is E, then its rest mass is given as:	Infinity	Negative	Zero	Variable
4.	The mathematical notation for exclusive OR operation is:	$X = A\bar{B} + \bar{A}B$	$X = \overline{A+B}$	$X = \overline{AB} + AB$	$X = \bar{A} + \bar{B}$
5.	The output of an OR gate is '0' only when its:	Both inputs are '1'	Both inputs are '0'	Either input is '1'	Either input is '0'
6.	The forbidden energy gap of an insulator is of the order of:	5 eV	10 eV	2 eV	Several eV
7.	The ratio of the rms value of the applied voltage to the rms value of resulting A.C is:	Reactance	Resonance	Impedance	Conductance
8.	In three phase A.C. supply, coils are inclined at an angle of:	0°	90°	120°	180°
9.	When the back emf is zero, it draws:	Maximum current	Zero current	Steady current	Pulsating current
10.	Frequency of A.C. used in Pakistan is:	100 Hz	50 Hz	60 Hz	120 Hz
11.	The charge to mass ratio of neutron is:	Less than electron	Equal to electron	Greater than electron	Zero
12.	High resistance in voltmeter is given by:	$\dfrac{I_g R_g}{I - I_g}$	$\dfrac{I - I_g}{I_g}$	$\dfrac{V}{I_g} - R_g$	$I_g - \dfrac{R_g}{V}$
13.	Heat generated by a 40 watt bulb in one hour is:	4800 J	14400 J	144000 J	1440 J
14.	The negative of the electric potential gradient is:	Electric intensity	Electromotive force	Potential difference	Electric force
15.	Electric potential energy per unit electric potential is called:	Intensity	Flux	Current	Charge
16.	Electrons are:	Hadrons	Leptons	Quarks	Baryons
17.	The amount of energy equivalent to 1 a.m.u is:	0.9315 MeV	9.315 MeV	93.15 MeV	931.5 MeV

309-423-1A-14000 ★★★

Physics **HSSC (12th) 1st Annual 2023** Time : 20 Minutes

Paper : II | Group : II | Objective – (iv) | Marks : 17

SWL-12-2-23 | Paper Code | 8 | 4 | 7 | 8

Note: - You have four choices for each objective type question as A, B, C and D. The choice which you think is correct fill that circle in front of that question number in your answer book. Use marker or pen to fill the circles. Cutting or filling up two or more circles will result no mark.

SECTION–A

Q.1	Questions	A	B	C	D
1.	Normally an electron can reside in metastable state for about:	$10^{-3}s$	$10^{-4}s$	$10^{-5}s$	$10^{-8}s$
2.	In annihilation emitted photons move in opposite directions to conserve:	Mass	Energy	Momentum	Charge
3.	Numerical value of $\frac{h}{m_o c}$ is :	$2.43 \times 10^{-12} m$	$2.43 \times 10^{12} m$	$2.43 \times 10^{-19} m$	$2.43 \times 10^{19} m$
4.	A two inputs NAND gate with inputs A and B has an output zero if:	A is zero	B is zero	Both A and B are zero	Both A and B are one
5.	The relation for gain of an inverting operational amplifier is:	$G = \frac{R_1}{R_2}$	$G = \frac{R_2}{R_1}$	$G = \frac{-R_2}{R_1}$	$G = \frac{-R_1}{R_2}$
6.	Young's modulus for Lead is:	$15 \times 10^9 Nm^{-2}$	$7.7 \times 10^9 Nm^{-2}$	$5.6 \times 10^9 Nm^{-2}$	$2.2 \times 10^9 Nm^{-2}$
7.	In three phase A.C. supply, the voltage across each of the lines and the neutral line is:	220 V	230 V	400 V	440 V
8.	The types of modulation are:	2	3	4	5
9.	In case of step up transformer:	$N_s < N_p$	$N_s > N_p$	$N_s = N_p$	$N_p = 0$
10.	Formula for self-inductance of the solenoid is:	$L = \mu_0 nAl$	$L = \mu_0 NAl$	$L = \mu_0 n^2 Al$	$L = \mu_0 N^2 Al$
11.	An ammeter is connected in a circuit in:	Perpendicular	Series	Antiparallel	Parallel
12.	The number of electrons in CRO is controlled by:	Grid	X-Deflecting plates	Y-Deflecting plates	Filament
13.	If there is no fourth band, tolerance is:	Zero	±5%	±10%	±20%
14.	The statement $\Phi_e = \frac{1}{\varepsilon_o} \times Q$ was given by :	Faraday	Oersted	Gauss	Coulomb
15.	Electric flux does not depend upon:	Shape of closed surface	Charge	Charge and medium	Medium
16.	The amount of energy equivalent to 1 amu is:	9.315 MeV	93.15 MeV	931.5 MeV	9315 MeV
17.	The mass of a neutron is almost equal to mass of:	Electron	Proton	Photon	Phonon

Note: - You have four choices for each objective type question as A, B, C and D. The choice which you think is correct; fill that circle in front of that question number in your answer book. Use marker or pen to fill the circles. Cutting or filling up two or more circles will result no mark.

Q.1	Questions	A	B	C	D
1.	For an inductor connected to an A.C. source, the applied voltage:	leads the current	is in phase with current	lags the current	changes independently
2.	The power dissipated in A.C. circuit is given by $P = I_{rms} \times V_{rms} \cos\theta$, in this relation $\cos\theta$ is called:	phase factor	gain factor	loss factor	power factor
3.	The curie temperature for iron is about:	$100^\circ C$	$750^\circ C$	$900^\circ C$	$1150^\circ C$
4.	The reverse current through a semiconductor diode is due to flow of:	holes	electrons	majority carriers	minority carriers
5.	A light emitting diode emits light only when it is:	OFF	reverse biased	forward biased	unbiased
6.	Momentum of photon is given by:	$\dfrac{h\lambda}{c}$	$\dfrac{f\lambda}{c}$	$\dfrac{hf}{c}$	$\dfrac{hf}{\lambda}$
7.	Compton shift equals the Compton wavelength, if the scattered X-ray photons are observed at:	180°	90°	60°	45°
8.	Orbital angular momentum of an electron in the allowed stationary orbit of hydrogen atom is given by:	$\dfrac{nh}{2\pi}$	$\dfrac{2h}{n\pi}$	$\dfrac{2\pi}{nh}$	$\dfrac{2n}{\pi h}$
9.	The unit of decay constant is:	m	S^{-1}	m^{-1}	S
10.	Total number of quarks is:	3	4	5	6
11.	Self inductance of a solenoid having length "l" number of turns per unit length "n" and area of cross-section "A" is given by:	$n^2 Al$	$\mu_o n Al$	$\mu_o n^2 Al$	$\mu_o n A^2 l$
12.	One henry is equal to:	$Vs^{-1}A^{-1}$	$Vs^{-1}A$	VsA	$Vs\,A^{-1}$
13.	When a charged particle is projected at right angle to the magnetic field, the magnitude of the magnetic force on charged particle is:	infinite	maximum	zero	negligible
14.	The value of permeability of free space is:	$4\times10^{-7}\ Wb\,A^{-1}m^{-1}$	$4\times10^{7}\ Wb\,A^{-1}m^{-1}$	$4\pi\times10^{-7}\ Wb\,A^{-1}m^{-1}$	$4\pi\times10^{7}\ Wb\,A^{-1}m^{-1}$
15.	SI unit of conductivity is:	$mho\,m^{-1}$	Siemen	$\Omega\,m$	$\Omega\,K^{-1}$
16.	A capacitor is a device that can:	generate charge	store charge	neutralize charge	burn charge
17.	Electric flux through a surface enclosing a charge depends on:	charge only	medium only	shape of closed surface	medium and charge enclosed