INTERMEDIATE PART-II (12th CLASS)

PHYSICS PAPER-II (OLD SCHEME) (SESSION 2012-2014) GROUP-I

TIME ALLOWED: 3.10 Hours   **SUBJECTIVE**   MAXIMUM MARKS: 83

NOTE: - Write same question number and its part number on answer book, as given in the question paper.

SECTION-I

2.   **Attempt any Eight parts.** $8 \times 2 = 16$

(i)   What is the effect of medium upon Coulomb's force between two charges?

(ii)   Define Electric Flux and give its unit.

(iii)   Define Electron Volt and show that $1eV = 1.6 \times 10^{-19} J$.

(iv)   Electric lines of force never cross. Why?

(v)   Define Magnetic Flux and write its unit.

(vi)   Write the expression for Lorentz Force and define it.

(vii)   Why the resistance of an ammeter should be very low?

(viii) Is it possible to orient a current loop in uniform magnetic field such that the loop will not tend to rotate? Explain.

(ix)   Define Self Induction also write its unit.

(x)   In a certain region the earth's magnetic field point vertically down. When a plane flies due north, which wingtip is positively charged?

(xi)   What is meant by Back emf effect in motor?

(xii)   Show that ε and $\frac{\Delta \phi}{\Delta t}$ have the same units.

3.   **Attempt any Eight parts.** $8 \times 2 = 16$

(i)   Explain why the terminal potential difference of a battery decreases when the current drawn from it is increased?

(ii)   Define with unit the temperature coefficient of resistance.

(iii)   What are non-ohmic devices? Give its two examples.

(iv)   Write down the Principle of Metal Detectors.

(v)   How does doubling the frequency affect the reactance of (a) an inductor   (b) a capacitor?

(vi)   What is meant by AM and F.M?

(vii)   Differentiate between Soft Magnetic Materials and Hard Magnetic Materials.

(viii) Define (a) Critical temperature   (b) Curie temperature

(ix)   What do you mean by Plasticity and Elasticity?

(x)   What are Sensors? Give the sensors for heat and sound.

(xi)   Why is the base current in a transistor very small?

(xii)   Why charge carriers are not present in the depletion region?

4.   **Attempt any Six parts.** $6 \times 2 = 12$

(i)   As a solid is heated and begins to glow, why does it first appear red?

(ii)   Can pair production take place in Vacuum? Explain.

(iii)   What advantages an electron microscope has over an optical microscope?

(iv)   Is energy conserved when an atom emits a photon of light?

(v)   What is meant by bremsstrah lung effect?

(vi)   Why are Heavy Nuclei unstable?

(vii)   What factors make a fusion reaction difficult to achieve?

(viii) What fraction of radioactive sample decays after two half-lives have elapsed?

(ix)   What are Hadrons?

SECTION-II (Essay Type)

NOTE: - **Attempt any three questions.** $8 \times 3 = 24$

5.(a)   Define Gauss's Law. Applying Gauss's Law, calculate the electric intensity due to
an infinite sheet of charge. $1 + 4 = 5$

(b)   The resistance of an iron wire at $O^\circ C$ is $1.0 \times 10^4 \, \Omega$. What is the resistance at $500^\circ C$

if the temperature coefficient of resistance of iron is $5.2 \times 10^{-3} \, K^{-1}$?   3

6.(a)   What is Transformer? Write down its principle, types and working. $1 + 1 + 1 + 2 = 5$

(b)   A galvanometer having an internal resistance $Rg = 15.0 \Omega$ gives full scale deflection

with current $I_g = 20.0 \, mA$. It is to be converted into an ammeter of range $10.0 \, A$.

Find the value of shunt resistance R_S.   3

7.(a)   Describe $R - L - C$ series circuit and derive relation for resonance frequency.
Also write its properties. $3 + 2 = 5$

(b)   The current flowing into the base of a transistor is $100 \, \mu A$. Find its collector current I_C,

its emitter current I_E and the ratio $\dfrac{I_C}{I_E}$, if the value of current gain β is 100.   3

8.(a)   Discuss the different energy bands in solids. Describe the electrical behaviour of
the conductors, semiconductors and insulators on the basis of energy bands. $2 + 3 = 5$

(b)   An electron is accelerated through a potential difference of 50 V.
Calculate its de Broglie wavelength.   3

9.(a)   What is Laser? Discuss the population inversion and laser action. $1 + 2 + 2 = 5$

(b)   A 75 kg person receives a whole body radiation dose of $24m - rad$, delivered by
$\alpha - particles$ for which RBE factor is 12. Calculate the equivalent dose in rem.   3

SECTION-III (PRACTICAL)

10. (a) **Give answers to any Four.** $4 \times 2 = 8$

(i)   What is the condition for balancing a wheatstone bridge?   (ii)   What is Shunt?
(iii)   How would you convert a galvanometer into a voltmeter?   (iv)   What is Internal Resistance?
(v)   Why a diode does not conduct when it is reverse biased?
(vi)   How can you test the correctness of connections of slide wire bridge?
(vii)   Define Photo Electric Effect.   (viii) Define Impedance and write its unit.

(b)   Write down the procedure to find the resistance of galvanometer by Half Deflection Method.
                                                   OR   3
Write down the procedure to describe the characteristic of Semiconductor Diode.

(c)   Answer the question given below on the basis of the following graph.   4
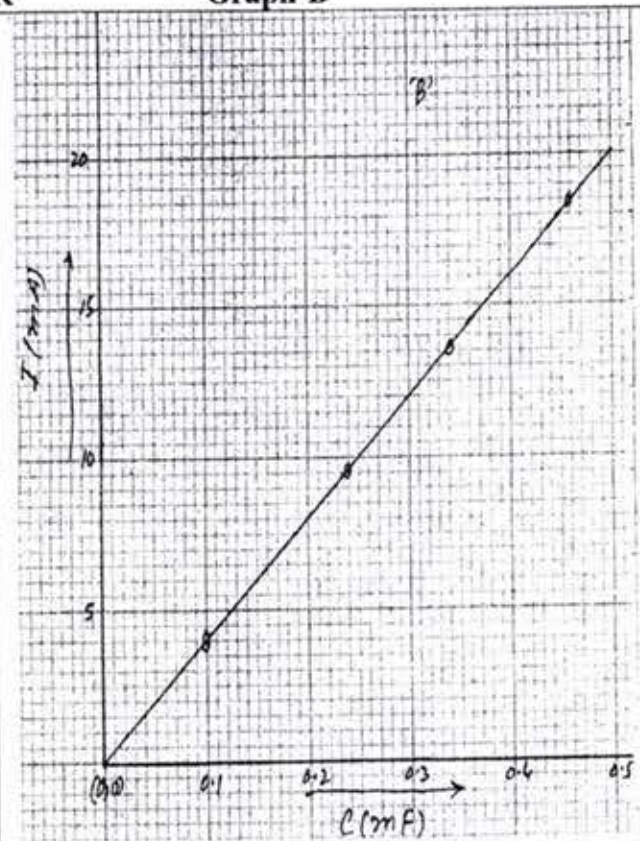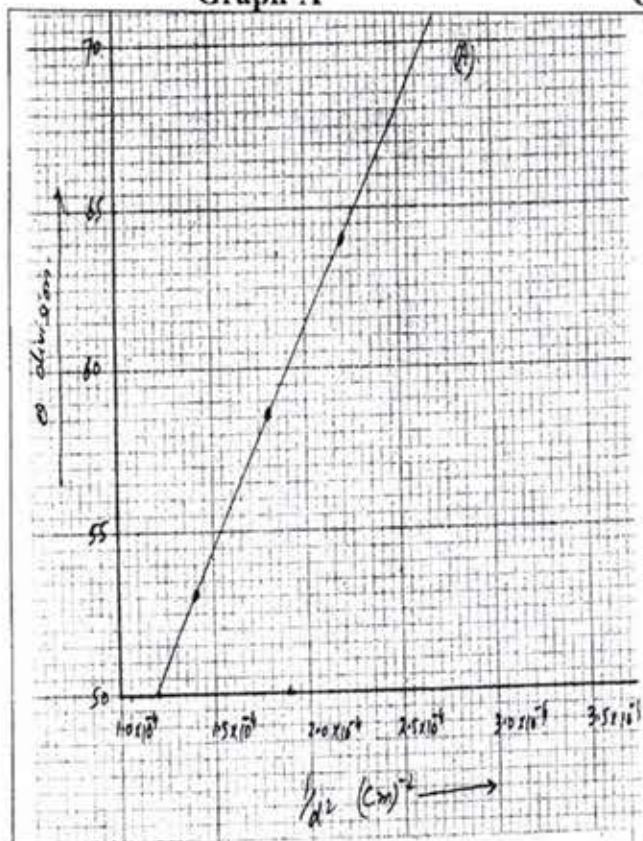Graph-A   (i)   What do you infer from the graph?   (ii)Find the slop of graph.   **OR**
Graph-B   (i)   What do you infer from the graph?   (ii) Find the slop of graph.

Graph-A   OR   Graph-B

PHYSICS   PAPER-II   (OLD SCHEME)   (SESSION 2012-2014)   GROUP-I

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 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. 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) Potential gradient is defined as:-

(A) $\dfrac{\Delta E}{\Delta V}$ (B) $-\dfrac{\Delta V}{\Delta E}$ (C) $-\dfrac{\Delta V}{\Delta r}$ (D) $\dfrac{\Delta r}{\Delta V}$

(2) The value of relative permittivity for all the dielectrics other than air or vacuum is always:-

(A) Less than unity   (B) Greater than unity   (C) Equal to unity   (D) Zero

(3) Maximum power(P_{max}) delivered by battery is:-

(A) $\dfrac{E^2}{4r}$ (B) $4rE^2$ (C) VIT   (D) Unlimited

(4) Work done by magnetic force on a moving charge is:-

(A) Maximum   (B) Zero   (C) Minimum   (D) Infinity

(5) Number of electrons in CRO is controlled by:-

(A) Anode   (B) Cathode   (C) Grid   (D) Deflecting plates

(6) An inductor may store energy in its:-

(A) Magnetic field   (B) Electric field   (C) Neighbouring Circuit   (D) External circuit

(7) Phenomena of Mutual Induction is used in:-

(A) Generator   (B) Galvanometer   (C) D.C motor   (D) Transformer

(8) In case of capacitor the unit of reactance is:-

(A) Mho   (B) Farad   (C) Ohm   (D) Henry

(9) By increasing frequency, the reactance of a capacitor:-

(A) Increases   (B) Decreases   (C) Remains constant   (D) Becomes infinite

(10) Fe, Ni and Cobalt are examples of:-   (A) Paramagnetic materials

(B) Diamagnetic materials   (C) Semiconductor materials   (D) Ferromagnetic materials

(11) The number of diodes in a bridge rectifier are:-

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

(12) In n – type material, the minority carriers are:-

(A) Free electrons   (B) Holes   (C) Protons   (D) Mesons

(13) Pair production is a process in which energy becomes:-

(A) Finite   (B) Infinite   (C) Mass   (D) Photon

(14) Production of X – rays is reverse process of:-

(A) Photoelectric effect   (B) Compton effect   (C) Mass Annihilation (D) Pair production

(15) K_{α} X – rays are produced due to transition of electrons from:-

(A) K to L shell   (B) L to K shell   (C) M to K shell   (D) M to L shell

(16) Two down quarks and one up quark make a:-

(A) Proton   (B) Photon   (C) Positron   (D) Neutron

(17) Control rods in a nuclear reactor are made of:-

(A) Boron   (B) Uranium   (C) Silicon   (D) Germanium

PHYSICS PAPER-II (OLD SCHEME) (SESSION 2012-2014) GROUP-I

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 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. 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) K_α X – rays are produced due to transition of electrons from:-

(A) K to L shell   (B) L to K shell   (C) M to K shell   (D) M to L shell

(2) Two down quarks and one up quark make a:-

(A) Proton   (B) Photon   (C) Positron   (D) Neutron

(3) Control rods in a nuclear reactor are made of:-

(A) Boron   (B) Uranium   (C) Silicon   (D) Germanium

(4) Potential gradient is defined as:-

(A) $\frac{\Delta E}{\Delta V}$ (B) $-\frac{\Delta V}{\Delta E}$ (C) $-\frac{\Delta V}{\Delta r}$ (D) $\frac{\Delta r}{\Delta V}$

(5) The value of relative permittivity for all the dielectrics other than air or vacuum is always:-

(A) Less than unity   (B) Greater than unity   (C) Equal to unity   (D) Zero

(6) Maximum power(P_{max}) delivered by battery is:-

(A) $\frac{E^2}{4r}$ (B) $4r E^2$ (C) VIT   (D) Unlimited

(7) Work done by magnetic force on a moving charge is:-

(A) Maximum   (B) Zero   (C) Minimum   (D) Infinity

(8) Number of electrons in CRO is controlled by:-

(A) Anode   (B) Cathode   (C) Grid   (D) Deflecting plates

(9) An inductor may store energy in its:-

(A) Magnetic field   (B) Electric field   (C) Neighbouring Circuit   (D) External circuit

(10) Phenomena of Mutual Induction is used in:-

(A) Generator   (B) Galvanometer   (C) D.C motor   (D) Transformer

(11) In case of capacitor the unit of reactance is:-

(A) Mho   (B) Farad   (C) Ohm   (D) Henry

(12) By increasing frequency, the reactance of a capacitor:-

(A) Increases   (B) Decreases   (C) Remains constant   (D) Becomes infinite

(13) Fe, Ni and Cobalt are examples of:-   (A) Paramagnetic materials

(B) Diamagnetic materials   (C) Semiconductor materials   (D) Ferromagnetic materials

(14) The number of diodes in a bridge rectifier are:-

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

(15) In n – type material, the minority carriers are:-

(A) Free electrons   (B) Holes   (C) Protons   (D) Mesons

(16) Pair production is a process in which energy becomes:-

(A) Finite   (B) Infinite   (C) Mass   (D) Photon

(17) Production of X – rays is reverse process of:-

(A) Photoelectric effect   (B) Compton effect   (C) Mass Annihilation   (D) Pair production

PHYSICS PAPER-II (OLD SCHEME) (SESSION 2012-2014) **GROUP-I**

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 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. 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) Phenomena of Mutual Induction is used in:-

(A) Generator   (B) Galvanometer   (C) D.C motor   (D) Transformer

(2) In case of capacitor the unit of reactance is:-

(A) Mho   (B) Farad   (C) Ohm   (D) Henry

(3) By increasing frequency, the reactance of a capacitor:-

(A) Increases   (B) Decreases   (C) Remains constant   (D) Becomes infinite

(4) Fe, Ni and Cobalt are examples of:-   (A) Paramagnetic materials

(B) Diamagnetic materials   (C) Semiconductor materials   (D) Ferromagnetic materials

(5) The number of diodes in a bridge rectifier are:-

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

(6) In n – type material, the minority carriers are:-

(A) Free electrons   (B) Holes   (C) Protons   (D) Mesons

(7) Pair production is a process in which energy becomes:-

(A) Finite   (B) Infinite   (C) Mass   (D) Photon

(8) Production of X – rays is reverse process of:-

(A) Photoelectric effect   (B) Compton effect   (C) Mass Annihilation   (D) Pair production

(9) K_α X – rays are produced due to transition of electrons from:-

(A) K to L shell   (B) L to K shell   (C) M to K shell   (D) M to L shell

(10) Two down quarks and one up quark make a:-

(A) Proton   (B) Photon   (C) Positron   (D) Neutron

(11) Control rods in a nuclear reactor are made of:-

(A) Boron   (B) Uranium   (C) Silicon   (D) Germanium

(12) Potential gradient is defined as:-

(A) $\dfrac{\Delta E}{\Delta V}$ (B) $-\dfrac{\Delta V}{\Delta E}$ (C) $-\dfrac{\Delta V}{\Delta r}$ (D) $\dfrac{\Delta r}{\Delta V}$

(13) The value of relative permittivity for all the dielectrics other than air or vacuum is always:-

(A) Less than unity   (B) Greater than unity   (C) Equal to unity   (D) Zero

(14) Maximum power(P_{max}) delivered by battery is:-

(A) $\dfrac{E^2}{4r}$ (B) $4rE^2$ (C) VIT   (D) Unlimited

(15) Work done by magnetic force on a moving charge is:-

(A) Maximum   (B) Zero   (C) Minimum   (D) Infinity

(16) Number of electrons in CRO is controlled by:-

(A) Anode   (B) Cathode   (C) Grid   (D) Deflecting plates

(17) An inductor may store energy in its:-

(A) Magnetic field   (B) Electric field   (C) Neighbouring Circuit   (D) External circuit

PHYSICS PAPER-II (OLD SCHEME) (SESSION 2012-2014) GROUP-I

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 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. 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)   Number of electrons in CRO is controlled by:-

(A) Anode   (B) Cathode   (C) Grid   (D) Deflecting plates

(2)   An inductor may store energy in its:-

(A) Magnetic field   (B) Electric field   (C) Neighbouring Circuit   (D) External circuit

(3)   Phenomena of Mutual Induction is used in:-

(A) Generator   (B) Galvanometer   (C) D.C motor   (D) Transformer

(4)   In case of capacitor the unit of reactance is:-

(A) Mho   (B) Farad   (C) Ohm   (D) Henry

(5)   By increasing frequency, the reactance of a capacitor:-

(A) Increases   (B) Decreases   (C) Remains constant   (D) Becomes infinite

(6) Fe, Ni and Cobalt are examples of:-   (A) Paramagnetic materials

(B) Diamagnetic materials   (C) Semiconductor materials   (D) Ferromagnetic materials

(7)   The number of diodes in a bridge rectifier are:-

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

(8)   In n – type material, the minority carriers are:-

(A) Free electrons   (B) Holes   (C) Protons   (D) Mesons

(9)   Pair production is a process in which energy becomes:-

(A) Finite   (B) Infinite   (C) Mass   (D) Photon

(10)   Production of X – rays is reverse process of:-

(A) Photoelectric effect   (B) Compton effect   (C) Mass Annihilation (D) Pair production

(11) K_α X – rays are produced due to transition of electrons from:-

(A) K to L shell   (B) L to K shell   (C) M to K shell   (D) M to L shell

(12)   Two down quarks and one up quark make a:-

(A) Proton   (B) Photon   (C) Positron   (D) Neutron

(13)   Control rods in a nuclear reactor are made of:-

(A) Boron   (B) Uranium   (C) Silicon   (D) Germanium

(14)   Potential gradient is defined as:-

(A) $\dfrac{\Delta E}{\Delta V}$ (B) $-\dfrac{\Delta V}{\Delta E}$ (C) $-\dfrac{\Delta V}{\Delta r}$ (D) $\dfrac{\Delta r}{\Delta V}$

(15)   The value of relative permittivity for all the dielectrics other than air or vacuum is always:-

(A) Less than unity   (B) Greater than unity   (C) Equal to unity   (D) Zero

(16)   Maximum power(P_{max}) delivered by battery is:-

(A) $\dfrac{E^2}{4r}$ (B) $4r\,E^2$ (C) VIT   (D) Unlimited

(17)   Work done by magnetic force on a moving charge is:-

(A) Maximum   (B) Zero   (C) Minimum   (D) Infinity

INTERMEDIATE PART-II (12ᵗʰ CLASS)

PHYSICS   PAPER-II   (OLD SCHEME)   (SESSION 2012-2014)   GROUP-II

TIME ALLOWED: 3.10 Hours   **SUBJECTIVE**   MAXIMUM MARKS: 83

NOTE: - Write same question number and its part number on answer book,
             as given in the question paper.

SECTION-I

2.   **Attempt any Eight parts.** $8 \times 2 = 16$

(i)   Describe briefly the force or forces on a positive point charge when placed between parallel plates with similar and equal charges.

(ii)   Do electrons tend to go to region of high potential or of low potential? Explain briefly.

(iii)   Define Capacitor and its Capacitance.

(iv)   Write any two comparison of electrical and gravitational forces.

(v)   Describe briefly why is there no work done by the magnetic force that acts on a moving charge q in uniform magnetic field with velocity V .

(vi)   What should be orientation of a current carrying coil in a magnetic field so that torque acting upon the coil is   (a) maximum   (b) minimum

(vii)   What is Cathode ray Oscilloscope? State its principle.

(viii)   Describe briefly Electric Flux.

(ix)   Does the induced emf always act to decrease the magnetic flux through a circuit? Explain.

(x)   When an electric motor, such as an electric drill, is being used, does it also act as a generator? If so, what is the consequence of this?

(xi)   Define Self Inductance. Also write its unit.

(xii)   Write two uses of Transformer.

3.   **Attempt any Eight parts.** $8 \times 2 = 16$

(i)   Why does the resistance of a conductor rise with Temperature?

(ii)   Explain why the terminal potential difference of a battery decreases when the current drawn from it is increased?

(iii)   Why Potentiometer is preferred than ordinary voltmeter?

(iv)   How does doubling the frequency effect the reactance of a capacitor?

(v)   A sinusoidal current has rms value of $10 A$. What is the maximum or peak value?

(vi)   Define peak to peak value of Current.

(vii)   What are diamagnetic substances? Give one example.

(viii)   Differentiate between Intrinsic and Extrinsic Semiconductors.

(ix)   What do you mean by term Coercitivity?

(x)   Why ordinary silicon diodes do not emit light?

(xi)   What is the net charge on a p – type or n – type substance?

(xii)   Write two applications of Photodiodes.

4.   **Attempt any Six parts.** $6 \times 2 = 12$

(i)   As a solid is heated and begins to glow, why does it first appear red?

(ii)   Will bright light eject more electrons from a metal surface than dimmer light of the same colour?

(iii)   What is the difference between Inertial and Non-inertial frame of reference?

(iv)   How can the spectrum of Hydrogen contains so many lines when Hydrogen contains one Electron?

(v)   What are the advantages of lasers over ordinary light?

(vi)   Why are the heavy nuclei unstable?

(vii)   What factors make a fusion reaction difficult to achieve?

(viii)   What is the function of moderator in a Nuclear reactor?

(ix)   Define Nuclear Fission and Fusion.

SECTION-II (Essay Type)

NOTE: - **Attempt any three questions.** $8 \times 3 = 24$

5.(a)   Define Electromotive Force and derive the relation between emf and terminal potential difference. Why the terminal potential difference is les than emf in the presence of current? $1 + 3 + 1 = 5$

(b)   Determine the Electric Field at a point $\vec{r} = (4\hat{i} + 3\hat{j})m$ caused by a point charge $q = 5.0 \times 10^{-6} C$ placed at the origin.   3

6.(a)   How charge to mass ratio $\left(\dfrac{e}{m}\right)$ of an electron is determined?   5

(b)   A square coil of side 16cm has 200 turns and rotates in a uniform magnetic field of magnitude 0.05 T. If the peak value of emf is 12 V. What is the angular velocity of the coil?   3

7.(a)   Describe $R - L - C$ series circuit. Derive relation for its resonance frequency and write the properties of this circuit.   5

(b)   The current flowing in to the base of transistor is $100 \mu A$. Find the collector current I_C, its emitter current I_E and the ratio of I_C/I_E , if the current gain β is 100.   3

8.(a)   What is Strain Energy? Find its value when a wire of length $'L'$ is stretched by a certain force.   5

(b)   Assuming you radiate as does a blackbody at your body temperature about $37°C$, at what wavelength do you emit the most energy.   (Wien's constant = $2.9 \times 10^{-3} mk$)   3

9.(a)   Explain the Fission Process. Discuss the Fission Chain reaction and Nuclear reactor in detail.   5

(b)   Compute the shortest wavelength radiation in the Balmer Series? What value of n must be used?   3

SECTION-III (PRACTICAL)

10. (a) Give answers to any Four. $4 \times 2 = 8$

(i)   Why does the resistance of a wire rise with temperature?

(ii)   How a voltmeter is connected in a circuit? How an ammeter is connected in a circuit?

(iii)   Write down the principle of a Galvanometer.   (iv) What are the acceptor atoms and donor atoms?

(v)   What is a Photon? Give its two properties.   (vi)   Define Truth Table.

(vii)   Draw the circuit diagram of the experiment to determine the resistance of a galvanometer by Half Deflection Method.

(viii)   Why a Potentiometer measures Potential difference accurately than a voltmeter?

(b)   Write down the procedure of experiment to study the variation of electric current with intensity of light using a Photocell.   **OR**   3
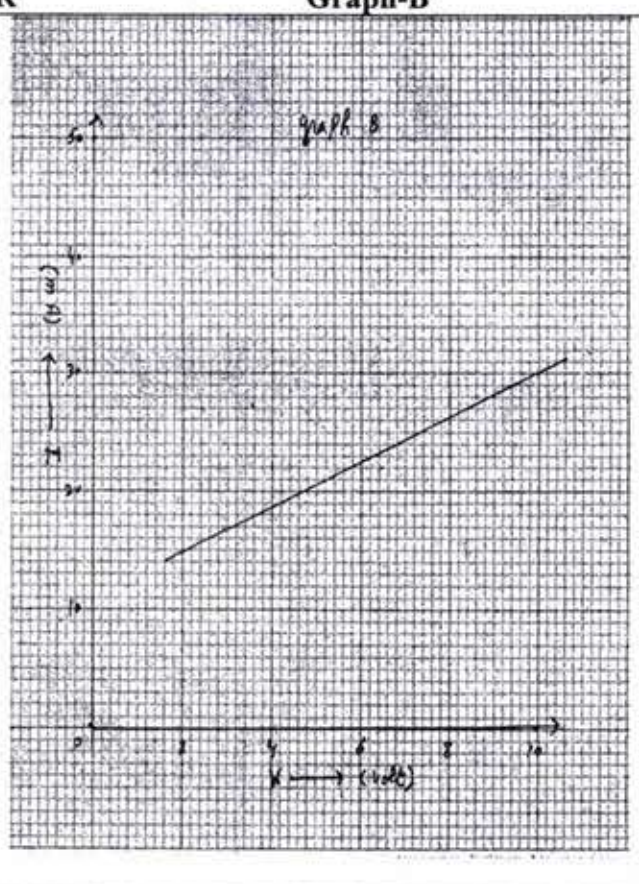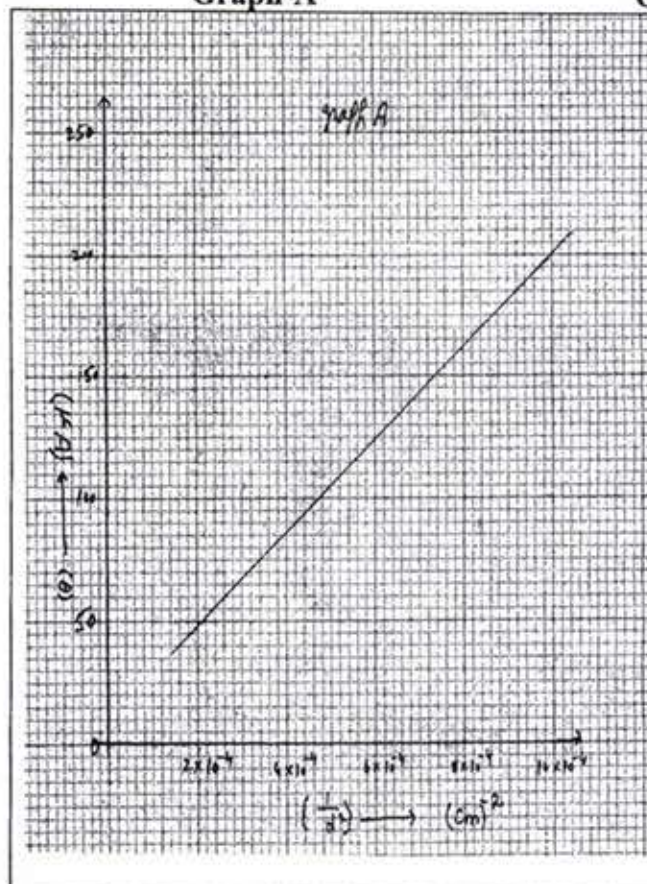Write down the procedure of experiment to determine the emf of a cell using Potentiometer.

(c)   Answer the question:given below on the basis of the following graph.   4
Graph-A   (i)   What do you infer from the graph?
(ii)   Find the photoelectric current from graph when $d = 40 cm$ **OR**
Graph-B   (i)   What do you infer from the graph?   (ii) Find the resistance from graph.
       Graph-A   **OR**   Graph-B

PHYSICS PAPER-II (OLD SCHEME) (SESSION 2012-2014) **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 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. 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) Non polar dielectric subjected to external electric field is:-

(A) Magnetized (B) Ionized (C) Polarized (D) Vapourized

(2) Ratio of mutual electric forces between two point charges $2\mu C$ and $3\mu C$ at distance $1cm$ is:-

(A) $2:3$ (B) $3:2$ (C) $1:6$ (D) $1:1$

(3) Resistivity depends on:-

(A) Length (B) Temperature (C) Area of Cross-section (D) All of these

(4) A charged particle moving at $45°$ to $\vec{B}$ follows:-

(A) Helical path (B) Straight path (C) Circular path (D) Elliptical path

(5) Galvanometer can be made sensitive by making $\dfrac{BAN}{C}$:-

(A) Small (B) Constant (C) Zero (D) Large

(6) In A.C circuit, the current lags by the voltage by $\pi/3$, the circuit components are:-

(A) R and C (B) R and L (C) Only R (D) Only C

(7) Power dissipated in an ideal choke is:-

(A) Large (B) Small (C) Zero (D) Infinite

(8) _____ quantity is increased in the secondary of step down transformer.

(A) Power (B) Current (C) Voltage (D) Frequency

(9) Self inductance of solenoid is:-

(A) $\mu_o n^2 A\ell$ (B) $\mu_o nA\ell$ (C) $\mu_o NA\ell$ (D) $\mu_o N^2 A\ell$

(10) _____ is not crystalline.

(A) Polythene (B) Zinc (C) Zirconia (D) Sodium Chloride

(11) A photodiode switches its current ON or OFF in:-

(A) $10^{-3} s$ (B) $10^{-6} s$ (C) $10^{-9} s$ (D) $10^{-12} s$

(12) Forward resistance of PN – junction is:-

(A) Zero (B) Very large (C) Infinity (D) Few ohms

(13) Two photons approach each other, their relative speed will be:-

(A) C (B) Less than C (C) $2C$ (D) $C/2$

(14) _____ has the largest de – Broglie wavelength at the same speed.

(A) Proton (B) α – particle (C) Electron (D) Neutron

(15) $K_\alpha - X$ –rays are produced due to transition of electrons from:-

(A) K to L shell (B) M to K shell (C) M to L shell (D) L to K shell

(16) A pair of quark and antiquark makes:-

(A) Baryon (B) Meson (C) Proton (D) Neutron

(17) Number of Neutrons in $^{238}_{92}U$ are:-

(A) 92 (B) 238 (C) 330 (D) 146

Number: 8474 INTERMEDIATE PART-II (12ᵗʰ CLASS)

PHYSICS PAPER-II (OLD SCHEME) (SESSION 2012-2014) **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 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. 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) $K_\alpha - X$ – rays are produced due to transition of electrons from:-

(A) K to L shell   (B) M to K shell   (C) M to L shell   (D) L to K shell

(2) A pair of quark and antiquark makes:-

(A) Baryon   (B) Meson   (C) Proton   (D) Neutron

(3) Number of Neutrons in $^{238}_{92}U$ are:-

(A) 92   (B) 238   (C) 330   (D) 146

(4) Non polar dielectric subjected to external electric field is:-

(A) Magnetized   (B) Ionized   (C) Polarized   (D) Vapourized

(5) Ratio of mutual electric forces between two point charges $2\,\mu C$ and $3\,\mu C$ at distance $1cm$ is:-

(A) $2:3$ (B) $3:2$ (C) $1:6$ (D) $1:1$

(6) Resistivity depends on:-

(A) Length   (B) Temperature   (C) Area of Cross-section   (D) All of these

(7) A charged particle moving at $45°$ to $\vec{B}$ follows:-

(A) Helical path   (B) Straight path   (C) Circular path   (D) Elliptical path

(8) Galvanometer can be made sensitive by making $\dfrac{BAN}{C}$:-

(A) Small   (B) Constant   (C) Zero   (D) Large

(9) In A.C circuit, the current lags by the voltage by $\pi/3$, the circuit components are:-

(A) R and C (B) R and L (C) Only R (D) Only C

(10) Power dissipated in an ideal choke is:-

(A) Large   (B) Small   (C) Zero   (D) Infinite

(11) _____ quantity is increased in the secondary of step down transformer.

(A) Power   (B) Current   (C) Voltage   (D) Frequency

(12) Self inductance of solenoid is:-

(A) $\mu_o n^2 A\ell$ (B) $\mu_o n A\ell$ (C) $\mu_o NA\ell$ (D) $\mu_o N^2 A\ell$

(13) _____ is not crystalline.

(A) Polythene   (B) Zinc   (C) Zirconia   (D) Sodium Chloride

(14) A photodiode switches its current ON or OFF in:-

(A) $10^{-3}s$ (B) $10^{-6}s$ (C) $10^{-9}s$ (D) $10^{-12}s$

(15) Forward resistance of PN – junction is:-

(A) Zero   (B) Very large   (C) Infinity   (D) Few ohms

(16) Two photons approach each other, their relative speed will be:-

(A) C (B) Less than C (C) $2C$ (D) $C/2$

(17) _____ has the largest de – Broglie wavelength at the same speed.

(A) Proton   (B) α – particle   (C) Electron   (D) Neutron

PHYSICS   PAPER-II   (OLD SCHEME)   (SESSION 2012-2014)   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 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. 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)   _____ quantity is increased in the secondary of step down transformer.

(A) Power   (B) Current   (C) Voltage   (D) Frequency

(2)   Self inductance of solenoid is:-

(A) $\mu_o n^2 A\ell$ (B) $\mu_o nA\ell$ (C) $\mu_o NA\ell$ (D) $\mu_o N^2 A\ell$

(3)   _____ is not crystalline.

(A) Polythene   (B) Zinc   (C) Zirconia   (D) Sodium Chloride

(4)   A photodiode switches its current ON or OFF in:-

(A) $10^{-3}s$ (B) $10^{-6}s$ (C) $10^{-9}s$ (D) $10^{-12}s$

(5)   Forward resistance of PN – junction is:-

(A) Zero   (B) Very large   (C) Infinity   (D) Few ohms

(6)   Two photons approach each other, their relative speed will be:-

(A) C (B) Less than C (C) $2C$ (D) $C/2$

(7)   _____ has the largest de – Broglie wavelength at the same speed.

(A) Proton   (B) α – particle   (C) Electron   (D) Neutron

(8) $K_\alpha - X$ –rays are produced due to transition of electrons from:-

(A) K to L shell   (B) M to K shell   (C) M to L shell   (D) L to K shell

(9)   A pair of quark and antiquark makes:-

(A) Baryon   (B) Meson   (C) Proton   (D) Neutron

(10)   Number of Neutrons in $^{238}_{92}U$ are:-

(A) 92   (B) 238   (C) 330   (D) 146

(11)   Non polar dielectric subjected to external electric field is:-

(A) Magnetized   (B) Ionized   (C) Polarized   (D) Vapourized

(12)   Ratio of mutual electric forces between two point charges $2\mu C$ and $3\mu C$ at distance $1cm$ is:-

(A) $2:3$ (B) $3:2$ (C) $1:6$ (D) $1:1$

(13)   Resistivity depends on:-

(A) Length   (B) Temperature   (C) Area of Cross-section   (D) All of these

(14)   A charged particle moving at $45°$ to $\vec{B}$ follows:-

(A) Helical path   (B) Straight path   (C) Circular path   (D) Elliptical path

(15)   Galvanometer can be made sensitive by making $\dfrac{BAN}{C}$:-

(A) Small   (B) Constant   (C) Zero   (D) Large

(16)   In A.C circuit, the current lags by the voltage by $\pi/3$, the circuit components are:-

(A) R and C (B) R and L (C) Only R (D) Only C

(17)   Power dissipated in an ideal choke is:-

(A) Large   (B) Small   (C) Zero   (D) Infinite

PHYSICS   PAPER-II   (OLD SCHEME)   (SESSION 2012-2014)   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 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. 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) Galvanometer can be made sensitive by making $\frac{BAN}{C}$:-

  (A) Small   (B) Constant   (C) Zero   (D) Large

(2) In A.C circuit, the current lags by the voltage by $\pi/3$, the circuit components are:-

  (A) R and C (B) R and L (C) Only R (D) Only C

(3) Power dissipated in an ideal choke is:-

  (A) Large   (B) Small   (C) Zero   (D) Infinite

(4) _____ quantity is increased in the secondary of step down transformer.

  (A) Power   (B) Current   (C) Voltage   (D) Frequency

(5) Self inductance of solenoid is:-

  (A) $\mu_o n^2 A\ell$ (B) $\mu_o nA\ell$ (C) $\mu_o NA\ell$ (D) $\mu_o N^2 A\ell$

(6) _____ is not crystalline.

  (A) Polythene   (B) Zinc   (C) Zirconia   (D) Sodium Chloride

(7) A photodiode switches its current ON or OFF in:-

  (A) $10^{-3} s$ (B) $10^{-6} s$ (C) $10^{-9} s$ (D) $10^{-12} s$

(8) Forward resistance of PN – junction is:-

  (A) Zero   (B) Very large   (C) Infinity   (D) Few ohms

(9) Two photons approach each other, their relative speed will be:-

  (A) C (B) Less than C (C) $2 C$ (D) $C/2$

(10) _____ has the largest de – Broglie wavelength at the same speed.

  (A) Proton   (B) α – particle   (C) Electron   (D) Neutron

(11) $K_\alpha - X$ – rays are produced due to transition of electrons from:-

  (A) K to L shell   (B) M to K shell   (C) M to L shell   (D) L to K shell

(12) A pair of quark and antiquark makes:-

  (A) Baryon   (B) Meson   (C) Proton   (D) Neutron

(13) Number of Neutrons in $^{238}_{92}U$ are:-

  (A) 92   (B) 238   (C) 330   (D) 146

(14) Non polar dielectric subjected to external electric field is:-

  (A) Magnetized   (B) Ionized   (C) Polarized   (D) Vapourized

(15) Ratio of mutual electric forces between two point charges $2\mu C$ and $3\mu C$ at distance $1cm$ is:-

  (A) $2:3$ (B) $3:2$ (C) $1:6$ (D) $1:1$

(16) Resistivity depends on:-

  (A) Length   (B) Temperature   (C) Area of Cross-section   (D) All of these

(17) A charged particle moving at $45°$ to $\vec{B}$ follows:-

  (A) Helical path   (B) Straight path   (C) Circular path   (D) Elliptical path

BOARD OF INTERMEDIATE AND SECONDARY EDUCATION, MULTAN

OBJECTIVE KEY FOR INTER (PART-I / II) Annual Examination, 2017.

Name of Subject **Physics**   Session **2012 – 2014**

Group: 1st **old**

Q. Nos.	Paper Code 8471	Paper Code 8473	Paper Code 8475	Paper Code 8477
1.	C	B	D	C
2.	B	D	C	A
3.	A	A	B	D
4.	B	C	D	C
5.	C	B	A	B
6.	A	A	B	D
7.	D	B	C	A
8.	C	C	A	B
9.	B	A	B	C
10.	D	D	D	A
11.	A	C	A	B
12.	B	B	C	D
13.	C	D	B	A
14.	A	A	A	C
15.	B	B	B	B
16.	D	C	C	A
17.	A	A	A	B
18.				
19.	/	/	/	/
20.				

Group: 2nd **old**

Q. Nos.	Paper Code 8472	Paper Code 8474	Paper Code 8476	Paper Code 8478
1.	C	D	B	D
2.	D	B	A	B
3.	B	D	A	C
4.	A	C	C	B
5.	D	D	D	A
6.	B	B	A	A
7.	C	A	C	C
8.	B	D	D	D
9.	A	B	B	A
10.	A	C	D	C
11.	C	B	C	D
12.	D	A	D	B
13.	A	A	B	D
14.	C	C	A	C
15.	D	D	D	D
16.	B	A	B	B
17.	D	C	C	A
18.				
19.	/	/	/	/
20.				

سرٹیفیکیٹ بابت تصحیح سوالیہ پرچہ / مارکنگ Key

ہم نے مضمون Physics پرچہ _____ II _____ سکیم **old** I, II گروپ _____ انٹر سالانہ / ضمنی امتحان 2017 کا سوالیہ پرچہ نشاۃ ثانیہ معروضی (Subjective & Objevtive) کو بنظر عمیق چیک کر لیا ہے۔ یہ پرچہ سلیبس کے عین مطابق Set کیا گیا ہے۔ اس سوالیہ پرچہ میں کسی قسم کی کوئی غلطی نہ ہے۔ ہم نے سوالیہ پرچہ کا اردو اور انگریزی Version بھی چیک کر لیا ہے یہ Version آپس میں مطابقت رکھتے ہیں اور سلیبس (Syllabus) کے مطابق بھی ہیں۔ نیز اس پرچہ کی Key کی بابت بھی تصدیق کی جاتی ہے کہ یہ بھی درست بنائی گئی ہے۔ اس میں بھی کسی قسم کی کوئی غلطی نہ ہے۔ مزید یہ کہ ہم نے Key بنانے سے متعلق دفتر کی جانب سے جاری کردہ ہدایات وصول کر کے ان کا بغور مطالعہ کر لیا ہے اور ان کی روشنی میں Key بنائی ہے۔

PREPARED & CHECKED BY

Sr.No Name   Designation Institution   Mobile No.   Signature.