

INTERMEDIATE PART-II (12th CLASS)**PHYSICS PAPER-II (NEWSHEME (SESSION 2015-2017))**

TIME ALLOWED: 2.40 Hours

SUBJECTIVE

MAXIMUM MARKS: 68

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

SECTION-I2. **Attempt any eight parts.****8 × 2 = 16**

- (i) Electric lines of force never cross each other Why?
- (ii) Suppose that you follow an electric field line due to a Positive point charge. Do electric field and the potential increase or decrease? Explain.
- (iii) Describe the Force or Forces on a positive point charge when placed between parallel plates with opposite and equal charge.
- (iv) Two opposite point charges, each of magnitude q are separated by a distance $2d$. What is the electric potential at a point P mid-way between them?
- (v) Why the resistance of an ammeter should be very low?
- (vi) Why does the picture on a TV screen become distorted when a magnet is brought near the screen?
- (vii) How can a current loop be used to determine the presence of a magnetic field in a given region of space?
- (viii) Differentiate between magnetic flux and flux density?
- (ix) Can an electric motor be used to drive an electric generator with the output from the generator being used to operate the motor?
- (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) Does the induced emf always act to decrease the magnetic flux through a circuit? Explain.
- (xii) How would you position a flat loop of wire in a changing magnetic field so that there is no emf induced in the loop?

3. **Attempt any eight parts.****8 × 2 = 16**

- (i) Define Electroplating and Electrolysis.
- (ii) Describe a Circuit which will give a continuously varying Potential.
- (iii) Why the terminal potential difference of a battery decreases with increase in drawn Current? Explain.
- (iv) Define Impedance and give its Units.
- (v) How does doubling the Frequency affect the reactance of (a) An inductor (b) A capacitor.
- (vi) What is meant by A.M and F.M?
- (vii) Define Polymeric Solids. Also give two examples.
- (viii) Define Tensile Strain and give its Units.
- (ix) Define Brittle Substance and give two examples.
- (x) How OP- Amplifier is used as Comparator? Explain with circuit diagram.
- (xi) Why charge carriers are not present in the Depletion Region?
- (xii) What is the effect of forward and reverse biasing of a diode on the width of Depletion Region?

P.T.O.

4. Attempt any six parts.

6 x 2 = 12

- (i) Define special theory of Relativity and General theory of Relativity.
- (ii) What happens to total radiation from a blackbody if its absolute temperature is doubled?
- (iii) When does light behave as a Wave? When does it behave as a particle?
- (iv) Define metastable State and population inversion for LASER.
- (v) What are the advantages of laser over ordinary light?
- (vi) Define Nuclear Fission and Nuclear Fusion.
- (vii) What are Isotopes? What do they have in common and what are their differences?
- (viii) What factors make a fusion reaction difficult to achieve?
- (ix) If you swallow an α - source and a β source, which would be the more dangerous to you? Explain why?

SECTION-II**NOTE: - Attempt any three questions.**

- 5.(a) What is Rheostat? How it is used as a variable resistor as well as potential divider? 5
- (b) Determine the electric field at the position $r = (4\hat{i} - 3\hat{j})m$ caused by a point charge $q = (5.0 \times 10^{-8} \text{ C})$ placed at origin. 3
- 6.(a) Define Ampere's law. Calculate the magnetic field due to current flowing through a solenoid. 5
- (b) A coil of wire has 10 Loops. Each loop has an area of $1.5 \times 10^{-3} \text{ m}^2$. A magnetic field is perpendicular to the surface of each loop at all times. If the magnetic field is changed from 0.05 T to 0.06 T in 0.1 S . Find the average emf induced in the coil during this time. 3
- 7.(a) Describe transistor as an amplifier and derive its gain formula. 5
- (b) A circuit has an inductance of $\frac{1}{\pi} \text{ H}$ and resistance of 2000Ω . A 50 Hz A.C. is supplied to it. Calculate the reactance and impedance offered by the circuit. 3
- 8.(a) State Louis de Broglie's Hypothesis. How Davisson and Germer verify it by experiment? 5
- (b) A 1.0 m long copper wire is subjected to stretching force and its length increases by 20 cm . Calculate the tensile strain and the percent elongation which the wire undergoes. 3
- 9.(a) Define the half life of a Radioactive Element. How the half life of a radioactive element can be determined? 5
- (b) Find the speed of the electron in the first Bohr orbit. 3

PHYSICS

PAPER-II

(NEW SCHEME)

(SESSION 2015-2017)

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) The value of ϵ_0 is:- (A) $8.85 \times 10^{-12} C^2 N^{-1} m^{-2}$
 (B) $8.85 \times 10^{-11} C^2 N^{-1} m^{-2}$ (C) $8.85 \times 10^{-10} C^2 N^{-1} m^{-2}$ (D) $8.85 \times 10^{-9} C^2 N^{-1} m^{-2}$
- (2) 1 volt is equal to:- (A) $1 J/C$ (B) $1 J/m$ (C) $1 N/C$ (D) $1 J.C$
- (3) Unit of resistivity is:-
 (A) Ohm (B) Ohm meter (C) $Ohm^{-2} meter^{-1}$ (D) mho
- (4) Unit of magnetic induction is also:-
 (A) $NA^{-1} m^{-1}$ (B) $NA^{-1} m$ (C) $NA m^{-1}$ (D) $NA m$
- (5) Formula for $\frac{e}{m}$ of an electron is:-
 (A) $\frac{2v}{B^2 r^2}$ (B) $\frac{v}{B^2 r^2}$ (C) $\frac{v}{Br^2}$ (D) $\frac{2v}{B^2 r}$
- (6) Unit of mutual induction is also:-
 (A) VSA^{-1} (B) $VS^{-1}A$ (C) VSA (D) $VA^{-1}m^{-1}$
- (7) Energy stored per unit volume in magnetic field is:-
 (A) $\frac{B^2}{2\mu_0}$ (B) $\frac{2B}{\mu_0}$ (C) $\frac{2B^2}{\mu_0}$ (D) $\frac{B}{2\mu_0^2}$
- (8) The $P-P$ value of the a.c voltage is:-
 (A) $2V_0$ (B) V_0 (C) V_0^2 (D) $2V_0^2$
- (9) The rms value of voltage is:-
 (A) $0.7 V_0$ (B) $0.07 V_0$ (C) $0.0707 V_0$ (D) $0.78 V_0$
- (10) Polythene is an example of:-
 (A) Amorphous solid (B) Polymeric solid (C) Crystalline solid (D) Plasma
- (11) The value of potential barrier for germanium is:-
 (A) $0.3V$ (B) $0.7V$ (C) $0.35V$ (D) $0.07V$
- (12) A photodiode can turn its current ON and OFF in:-
 (A) Nano seconds (B) Milli seconds (C) Micro seconds (D) Mega seconds
- (13) The speed of light 'c' in free space is same for:-
 (A) Two observers (B) All observers (C) Three observers (D) Four observers
- (14) When platinum wire is heated, it appears yellow at:-
 (A) $1300^\circ C$ (B) $1100^\circ C$ (C) $900^\circ C$ (D) $500^\circ C$
- (15) The value of the Rydberg's constant is:-
 (A) $1.0974 \times 10^7 m^{-1}$ (B) $1.0974 \times 10^7 km^{-1}$ (C) $1.0974 \times 10^7 cm^{-1}$ (D) $0.0974 \times 10^7 m^{-1}$
- (16) The value of atomic mass of an electron is:-
 (A) $0.00055 u$ (B) $1.00055 u$ (C) $0.10055 u$ (D) $0.01055 u$
- (17) The speed of α - particle is:-
 (A) $10^7 ms^{-1}$ (B) $10^6 ms^{-1}$ (C) $10^5 ms^{-1}$ (D) $10^8 ms^{-1}$

PHYSICS PAPER-II

(NEW SCHEME)

(SESSION 2015-2017)

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) The value of the Rydberg's constant is:-

- (A) $1.0974 \times 10^7 \text{ m}^{-1}$ (B) $1.0974 \times 10^7 \text{ km}^{-1}$ (C) $1.0974 \times 10^7 \text{ cm}^{-1}$ (D) $0.0974 \times 10^7 \text{ m}^{-1}$

(2) The value of atomic mass of an electron is:-

- (A) 0.00055 u (B) 1.00055 u (C) 0.10055 u (D) 0.01055 u

(3) The speed of α - particle is:-

- (A) 10^7 ms^{-1} (B) 10^6 ms^{-1} (C) 10^5 ms^{-1} (D) 10^8 ms^{-1}

(4) The value of ϵ_0 is:-

- (A) $8.85 \times 10^{-12} \text{ C}^2 \text{ N}^{-1} \text{ m}^{-2}$
 (B) $8.85 \times 10^{-11} \text{ C}^2 \text{ N}^{-1} \text{ m}^{-2}$ (C) $8.85 \times 10^{-10} \text{ C}^2 \text{ N}^{-1} \text{ m}^{-2}$ (D) $8.85 \times 10^{-9} \text{ C}^2 \text{ N}^{-1} \text{ m}^{-2}$

(5) 1 volt is equal to:-

- (A) 1 J/C (B) 1 J/m (C) 1 N/C (D) 1 J.C

(6) Unit of resistivity is:-

- (A) Ohm (B) Ohm meter (C) $\text{Ohm}^{-1} \text{ meter}^{-1}$ (D) mho

(7) Unit of magnetic induction is also:-

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

(8) Formula for $\frac{e}{m}$ of an electron is:-

- (A) $\frac{2v}{B^2 r^2}$ (B) $\frac{v}{B^2 r^2}$ (C) $\frac{v}{Br^2}$ (D) $\frac{2v}{B^2 r}$

(9) Unit of mutual induction is also:-

- (A) VSA^{-1} (B) $\text{VS}^{-1} \text{ A}$ (C) VSA (D) $\text{VA}^{-1} \text{ m}^{-1}$

(10) Energy stored per unit volume in magnetic field is:-

- (A) $\frac{B^2}{2\mu_0}$ (B) $\frac{2B}{\mu_0}$ (C) $\frac{2B^2}{\mu_0}$ (D) $\frac{B}{2\mu_0^2}$

(11) The $P-P$ value of the a.c voltage is:-

- (A) $2V_0$ (B) V_0 (C) V_0^2 (D) $2V_0^2$

(12) The rms value of voltage is:-

- (A) $0.7 V_0$ (B) $0.07 V_0$ (C) $0.0707 V_0$ (D) $0.78 V_0$

(13) Polythene is an example of:-

- (A) Amorphous solid (B) Polymeric solid (C) Crystalline solid (D) Plasma

(14) The value of potential barrier for germanium is:-

- (A) 0.3V (B) 0.7V (C) 0.35V (D) 0.07V

(15) A photodiode can turn its current ON and OFF in:-

- (A) Nano seconds (B) Milli seconds (C) Micro seconds (D) Mega seconds

(16) The speed of light 'c' in free space is same for:-

- (A) Two observers (B) All observers (C) Three observers (D) Four observers

(17) When platinum wire is heated, it appears yellow at:-

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

PHYSICS

PAPER-II

(NEW SCHEME)

(SESSION 2015-2017)

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) Unit of mutual induction is also:-

- (A) VSA^{-1} (B) $VN^{-1}A$ (C) VSA (D) $VA^{-1}m^{-1}$

(2) Energy stored per unit volume in magnetic field is:-

- (A) $\frac{B^2}{2\mu_0}$ (B) $\frac{2B}{\mu_0}$ (C) $\frac{2B^2}{\mu_0}$ (D) $\frac{B}{2\mu_0^2}$

(3) The $P-P$ value of the a.c voltage is:-

- (A) $2V_0$ (B) V_0 (C) V_0^2 (D) $2V_0^2$

(4) The rms value of voltage is:-

- (A) $0.7 V_0$ (B) $0.07 V_0$ (C) $0.0707 V_0$ (D) $0.78 V_0$

(5) Polythene is an example of:-

- (A) Amorphous solid (B) Polymeric solid (C) Crystalline solid (D) Plasma

(6) The value of potential barrier for germanium is:-

- (A) $0.3V$ (B) $0.7V$ (C) $0.35V$ (D) $0.07V$

(7) A photodiode can turn its current ON and OFF in:-

- (A) Nano seconds (B) Milli seconds (C) Micro seconds (D) Mega seconds

(8) The speed of light 'c' in free space is same for:-

- (A) Two observers (B) All observers (C) Three observers (D) Four observers

(9) When platinum wire is heated, it appears yellow at:-

- (A) $1300^\circ C$ (B) $1100^\circ C$ (C) $900^\circ C$ (D) $500^\circ C$

(10) The value of the Rydberg's constant is:-

- (A) $1.0974 \times 10^7 m^{-1}$ (B) $1.0974 \times 10^7 km^{-1}$ (C) $1.0974 \times 10^7 cm^{-1}$ (D) $0.0974 \times 10^7 m^{-1}$

(11) The value of atomic mass of an electron is:-

- (A) $0.00055 u$ (B) $1.00055 u$ (C) $0.10055 u$ (D) $0.01055 u$

(12) The speed of α -particle is:-

- (A) $10^7 ms^{-1}$ (B) $10^6 ms^{-1}$ (C) $10^3 ms^{-1}$ (D) $10^8 ms^{-1}$

(13) The value of ϵ_0 is:- (A) $8.85 \times 10^{-12} C^2 N^{-1} m^{-2}$

- (B) $8.85 \times 10^{-11} C^2 N^{-1} m^{-2}$ (C) $8.85 \times 10^{-10} C^2 N^{-1} m^{-2}$ (D) $8.85 \times 10^{-9} C^2 N^{-1} m^{-2}$

(14) 1 volt is equal to:-

- (A) $1 \frac{J}{C}$ (B) $1 \frac{J}{m}$ (C) $1 \frac{N}{C}$ (D) $1 J.C$

(15) Unit of resistivity is:-

- (A) Ohm (B) Ohm meter (C) $Ohm^{-1} meter^{-1}$ (D) mho

(16) Unit of magnetic induction is also:-

- (A) $NA^{-1}m^{-1}$ (B) $NA^{-1}m$ (C) NAm^{-1} (D) NAm

(17) Formula for $\frac{e}{m}$ of an electron is:-

- (A) $\frac{2v}{B^2 r^2}$ (B) $\frac{v}{B^2 r^2}$ (C) $\frac{v}{Br^2}$ (D) $\frac{2v}{B^2 r}$

PHYSICS

PAPER-II

(NEW SCHEME)

(SESSION 2015-2017)

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) The $P-P$ value of the $a.c$ voltage is:-
 (A) $2V_0$ (B) V_0 (C) V_0^2 (D) $2V_0^2$
- (2) The rms value of voltage is:-
 (A) $0.7 V_0$ (B) $0.07 V_0$ (C) $0.0707 V_0$ (D) $0.78 V_0$
- (3) Polythene is an example of:-
 (A) Amorphous solid (B) Polymeric solid (C) Crystalline solid (D) Plasma
- (4) The value of potential barrier for germanium is:-
 (A) $0.3V$ (B) $0.7V$ (C) $0.35V$ (D) $0.07V$
- (5) A photodiode can turn its current ON and OFF in:-
 (A) Nano seconds (B) Milli seconds (C) Micro seconds (D) Mega seconds
- (6) The speed of light 'c' in free space is same for:-
 (A) Two observers (B) All observers (C) Three observers (D) Four observers
- (7) When platinum wire is heated, it appears yellow at:-
 (A) $1300^\circ C$ (B) $1100^\circ C$ (C) $900^\circ C$ (D) $500^\circ C$
- (8) The value of the Rydberg's constant is:-
 (A) $1.0974 \times 10^7 m^{-1}$ (B) $1.0974 \times 10^7 km^{-1}$ (C) $1.0974 \times 10^7 cm^{-1}$ (D) $0.0974 \times 10^7 m^{-1}$
- (9) The value of atomic mass of an electron is:-
 (A) $0.00055 u$ (B) $1.00055 u$ (C) $0.10055 u$ (D) $0.01055 u$
- (10) The speed of α - particle is:-
 (A) $10^7 ms^{-1}$ (B) $10^8 ms^{-1}$ (C) $10^5 ms^{-1}$ (D) $10^9 ms^{-1}$
- (11) The value of ϵ_0 is:- (A) $8.85 \times 10^{-12} C^2 N^{-1} m^{-2}$
 (B) $8.85 \times 10^{-11} C^2 N^{-1} m^{-2}$ (C) $8.85 \times 10^{-10} C^2 N^{-1} m^{-2}$ (D) $8.85 \times 10^{-9} C^2 N^{-1} m^{-2}$
- (12) 1 volt is equal to:- (A) $1 J/C$ (B) $1 J/m$ (C) $1 N/C$ (D) $1 J.C$
- (13) Unit of resistivity is:-
 (A) Ohm (B) Ohm meter (C) $Ohm^{-1} meter^{-1}$ (D) mho
- (14) Unit of magnetic induction is also:-
 (A) $NA^{-1} m^{-1}$ (B) $NA^{-1} m$ (C) $NA m^{-1}$ (D) $NA m$
- (15) Formula for $\frac{e}{m}$ of an electron is:-
 (A) $\frac{2v}{B^2 r^2}$ (B) $\frac{v}{B^2 r^2}$ (C) $\frac{v}{Br^2}$ (D) $\frac{2v}{B^2 r}$
- (16) Unit of mutual induction is also:-
 (A) VSA^{-1} (B) $VS^{-1} A$ (C) VSA (D) $VA^{-1} m^{-1}$
- (17) Energy stored per unit volume in magnetic field is:-
 (A) $\frac{B^2}{2\mu_0}$ (B) $\frac{2B}{\mu_0}$ (C) $\frac{2B^2}{\mu_0}$ (D) $\frac{B}{2\mu_0}$

INTERMEDIATE PART-II (12th CLASS)**PHYSICS PAPER-II (OLD SCHEME) (SESSION 2012-2014)**

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 × 2 = 16**
- (i) How can you identify that which plate of a capacitor is positively charged?
 - (ii) Do electrons tend to go to region of high potential or of low potential? Explain briefly.
 - (iii) Define Electric Field and Electric Flux.
 - (iv) A particle carrying charge of $2e$ falls through a potential difference of $3.0V$. Calculate the energy acquired by it.
 - (v) Why does the picture on TV screen become distorted when a magnet is brought near the screen?
 - (vi) How can you use a magnetic field to separate isotopes of chemical element? Explain briefly.
 - (vii) Define Magnetic Flux and Flux density.
 - (viii) Describe briefly the Lorentz Force.
 - (ix) Does the induced emf in a circuit depend on the resistance of the circuit? Explain briefly.
 - (x) Show that ε and $\frac{\Delta\phi}{\Delta t}$ have the same units.
 - (xi) What is a Transformer? Also write its working principle.
 - (xii) Describe briefly the back motor effect in generators.
3. **Attempt any Eight parts.** **8 × 2 = 16**
- (i) Find the resistance if colour code is as Brown–Green–Red–Gold.
 - (ii) What are the difficulties in testing whether the filament of a lighted bulb obeys Ohm's Law?
 - (iii) Do bends in a wire affect its electrical resistance? Explain.
 - (iv) What is meant by A.M and F.M?
 - (v) How many times per second will an incandescent lamp reach maximum brilliance when connected to a 50 Hz source.
 - (vi) What is meant by instantaneous value of current?
 - (vii) What are ferromagnetic substances? Give an example.
 - (viii) What do you know about the term "domains" in ferromagnetic substances?
 - (ix) Why Hard Magnetic materials are easy to magnetized or demagnetized?
 - (x) Why a photo diode is operated in reverse biased state?
 - (xi) Why is the base current in a transistor very small?
 - (xii) Write down the truth table of NOT gate.
4. **Attempt any Six parts.** **6 × 2 = 12**
- (i) State Stefan Boltzmann Law for Radiation.
 - (ii) Which has the lower energy quanta? Radio waves or X – rays. Explain
 - (iii) What are the measurements on which two observers in relative motion will always agree upon?
 - (iv) Write the difference between Spontaneous and Stimulated Emission.
 - (v) What is meant by Line Spectrum? Explain how line spectrum can be used for identification of elements?
 - (vi) What are Leptons?
 - (vii) Describe the principle of operation of a solid state detector.
 - (viii) What fraction of a radioactive sample decays after two half lives have elapsed?
 - (ix) A particle which produces more ionization is less penetrating, why?

SECTION-II (Essay Type)**NOTE: - Attempt any three questions.****8 × 3 = 24**

- 5.(a) Define Capacitance and derive the expression for capacitance of parallel plate capacitor. Also discuss the effect on capacitance if dielectric medium is inserted between the plates. 1 + 3 + 1
- (b) The resistance of an iron wire at $0^\circ C$ is $1 \times 10^4 \Omega$. 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) Give the construction and working of a transformer. 5
- (b) A solenoid 15 cm long has 300 turns of wire. A current of 5 A flows through it. What is the magnitude of magnetic field inside the solenoid?
Where $\mu_0 = 4\pi \times 10^{-7} Wb A^{-1} m^{-1}$ 3
- 7.(a) Describe the series resonance circuit to find the resonance frequency. Also write its properties. 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 I_C/I_E , if the value of current gain β is 100. 3
- 8.(a) Define Photoelectric Effect. Explain it on the basis of Quantum Theory. 2 + 3
- (b) What stress would cause a wire to increase in length by 0.01 % if the Young's Modulus of the wire is $12 \times 10^{10} pa$. What force would produce this stress if the diameter of the wire is 0.56 mm. 3
- 9.(a) What is Nuclear Fission Reaction? Explain Fission Chain Reaction and controlled reaction in a reactor. 1 + 2 + 2
- (b) Find the speed of the electron in the first Bohr Orbit. 3

SECTION-III (PRACTICAL)**10. (a) Give answers to any Four.****4 × 2 = 8**

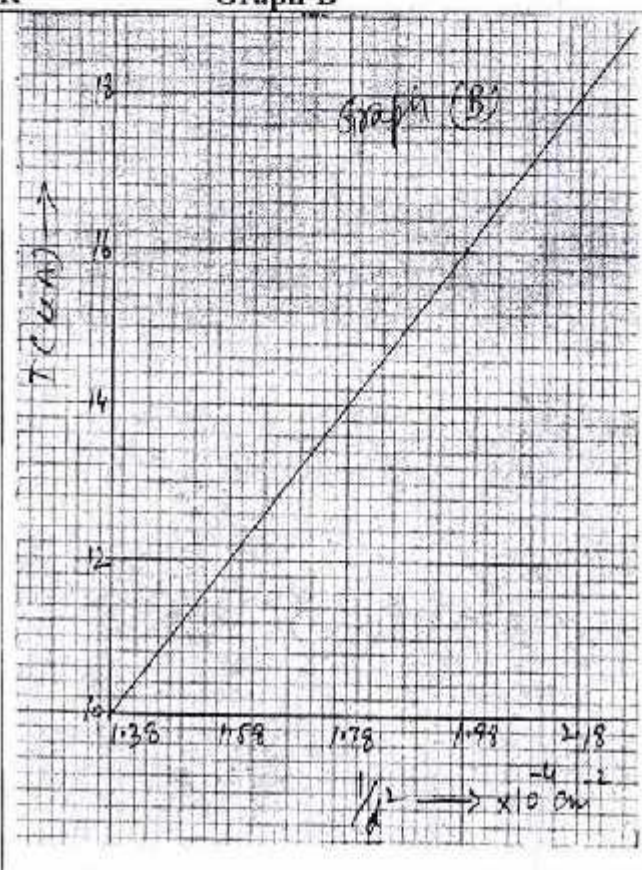
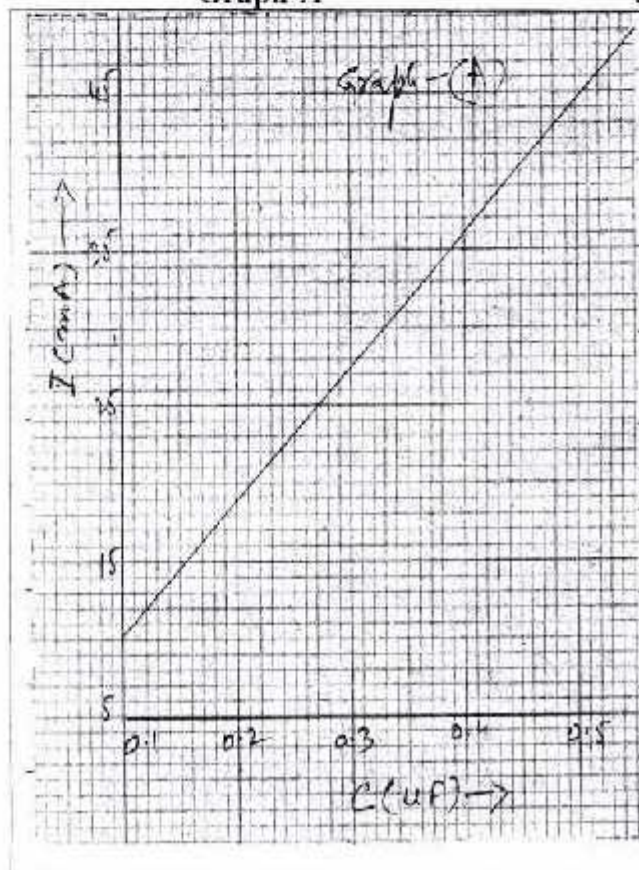
- (i) Give two uses of Potentiometer.
 - (ii) Draw the observation table to find the resistance of galvanometer by Half Deflection Method.
 - (iii) Why the V - I graph of a lighted bulb is not a straight line?
 - (iv) Draw the circuit diagram of wheatstone bridge.
 - (v) How the AC current changes when capacitance is changed?
 - (vi) Draw the truth table of NAND gate.
 - (vii) Why the current does not pass through the galvanometer when slide wire bridge is balanced?
 - (viii) Why a di. ode does not conduct when it is reverse biased?
- (b) Write down the procedure to find the emf of a cell using potentiometer. 3

OR

Write down the procedure to find the resistance of voltmeter.

- (c) Answer the question given below on the basis of the following graph. 4

- Graph-A** (i) What do you infer from graph? (ii) Find the slope of graph. **OR**
- Graph-B** (i) What do you infer from graph? (ii) Find the slope of graph.

Graph-A**OR****Graph-B**

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

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) Transistors are made from:-
 (A) Doped semi conductors (B) Pure semi conductors (C) Insulators (D) Metals
- (2) For pair production, minimum energy of photon must be:-
 (A) 0.91 MeV (B) 0.51 MeV (C) 1.02 MeV (D) 0.10 MeV
- (3) Einstein was awarded Nobel Prize for his explanation of:-
 (A) Photoelectric effect (B) Compton effect (C) Black body radiation (D) Special theory
- (4) Balmer series contain wavelengths in:-
 (A) Ultraviolet region (B) Far ultraviolet region (C) Infrared region (D) Visible region
- (5) The number of protons in an atom is always equal to the number of:-
 (A) Neutrons (B) Electrons (C) Positron (D) Mesons
- (6) Neutron was discovered in 1932 by:-
 (A) Bohr (B) Newton (C) Chadwick (D) Dirac
- (7) Farad is defined as:-
 (A) $\frac{\text{Coulomb}}{\text{Volt}}$ (B) $\frac{\text{Ampere}}{\text{Volt}}$ (C) $\frac{\text{Coulomb}}{\text{Joule}}$ (D) $\frac{\text{Joule}}{\text{Coulomb}}$
- (8) If the distance between two charges is increased to double, then force between them becomes:-
 (A) Half (B) Double (C) Four times (D) One fourth
- (9) Drift velocity of an electron in a conductor is of the order of:-
 (A) 10^3 m/sec (B) 10^{-6} m/sec (C) 10^6 m/sec (D) 10^{-3} m/sec
- (10) To measure the current in a circuit ammeter is always connected in:-
 (A) Parallel (B) Series (C) Neither parallel nor series (D) Some times parallel sometimes series
- (11) One Tesla is equal to:-
 (A) $\text{Nm}A^{-1}$ (B) $\text{Nm}^{-1}A^{-1}$ (C) $\text{Nm}^{-1}A$ (D) Nm^2A
- (12) Electric field produces magnetic field was discovered by:-
 (A) Qersted (B) Lenz (C) Faraday (D) Henry
- (13) When back emf in a circuit is zero, it draws:-
 (A) Zero current (B) Minimum current (C) Maximum current (D) Average current
- (14) The highest value reached by voltage or current in one cycle is called:-
 (A) Peak to peak value (B) Instantaneous value (C) Peak value (D) Root mean square value
- (15) The phase angle between the voltage and current through a resistor is:-
 (A) 0° (B) 45° (C) 180° (D) 270°
- (16) The SI unit of stress is the same as that of:-
 (A) Momentum (B) Pressure (C) Force (D) Length
- (17) Conversion of A.C into D.C is called:-
 (A) Modulation (B) Amplification (C) Oscillation (D) Rectification

**BOARD OF INTERMEDIATE AND SECONDARY EDUCATION,
MULTAN**

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

Name of Subject Physics

Session _____

Group: 1st New Scheme

Group: 2nd old scheme

Q. Nos.	Paper Code 4471	Paper Code 4473	Paper Code 4475	Paper Code 4477
1.	A	A	A	A, B C, D
2.	A	A	A	A
3.	B	A	B	A
4.	A	A	A	A
5.	A	A	A	B
6.	A, B C, D	B	B	A
7.	A	A	A	A
8.	A	A	A	B
9.	A	A, B C, D	A	A
10.	B	A	A	A
11.	A	A	A	A
12.	A	A	A	A
13.	B	B	B	A
14.	A	A	A	A
15.	A	A	A	B
16.	A	B	A, B C, D	A
17.	A	A	A	A
18.	/	/	/	/
19.	/	/	/	/
20.	/	/	/	/

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

سرٹیفکیٹ بابت تصحیح سوالیہ پرچہ مارکنگ Key

ہم نے مضمون Physics پرچہ II گروپ New/old نمبر کا امتحانی سال 2017 کا سوالیہ پرچہ تیار کر دیا ہے۔ اس سوالیہ پرچہ میں کسی قسم کی کوئی (Subjective & Objective) کو نظر میں نہ رکھ 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 بتائی 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 تیار 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
1.	Bashir Ahmad	A.P	G.C. Kabirwala	0300-6305057	B.Ahmad
---	Shabir Sghal	A.P	Govt. W. H. I. College	03077360030	S
---	Kaleem Ullah	A.P	Govt. College of Science	0301-7402172	Kaleem Ullah
---	J. Rafiq	ASSO. Prof	Govt. College Burewala	0334-7201282	J. Rafiq