Paper Code Number:	2024 INTERMEDIATE PART-II (12th Class)	Roll No: _____

PHYSICS PAPER-II MODEL PAPER

TIME ALLOWED: 20 Minutes	OBJECTIVE	MAXIMUM 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 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	If a charged particle + "q" of mass "m" is projected parallel in an electric field E, the acceleration:	Zero	qE/m	qEm	m/qE
2	The electric flux through a closed surface enclosing charge +q at its centre depends upon:	Geometry of the surface	Charge enclosed by the surface	The medium in which charge is placed	Both B & C
3	If no fourth band is present on a carbon resistor, the tolerence will:	± 5%	±10%	± 20%	0%
4	In C.R.O to display the given voltage is connect to:	X-plates	Y-plates	Cathode	Anode
5	The galvanometer consist of a moving coil galvanometer given by:	BAN/C	BN/CA	NAC/B	C/BAN
6	The direction of induced current is determined by:	Ohm law	Faraday's law	Lenz's law	Gauss's law
7	For A.C inductor behaves like:	Capacitor	Thermistor	Rectifier	Resister
8	The phase angle between voltage and current through resistor in A.C circuit is:	0 degree	45 degree	90 degree	180 degree
9	Metal detector consist of:	L-C circuit	R-C circuit	R-L circuit	RLC-circuit
10	High temperature super conductor have a critical temperature greater than:	52K	77K	125K	163K
11	In operational amplifier as a comparator when V – > V +, then at the output, we get:	$Vo = +Vce$	$Vo = -Vcc$	$Vo = 0$	Vo = infinity
12	The S.I unit of current gain are:	Ampere	Gray	Ohm	No unit
13	The reverse process of photoelectric effect is:	Compton's effect	Pair production	Black body radiation	X-rays
14	Which photon of light has least energy?	Green	Yellow	Blue	Red
15	The shortest wavelength in bracket series has a wavelength:	364 nm	1457 nm	1876 nm	infinity
16	Co-60, radioactive isotope is the source of:	Alpha-rays	Beta-rays	Gamma rays	Neutrons
17	The biological effects of radiation are of:	Two types	Four types	Six types	Ten types

INTERMEDIATE PART-II (12th Class)	2024	Roll No: _____
PHYSICS PAPER-II	MODEL PAPER	
TIME ALLOWED: 2.40 Hours	SUBJECTIVE	MAXIMUM MARKS: 68

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

SECTION-I

2. Attempt any eight parts. $8 \times 2 = 16$

(i)	How you can identify that which plate of capacitor is positively charged?
(ii)	How many joules in an electron volt?
(iii)	Write two similarities between electric force and gravitational force?
(iv)	Define potential gradient. Write its S.I unit.
(v)	Why does the picture on a T.V screen become distorted when a magnet is brought near the screen?
(vi)	When charged particle is projected perpendicular to the magnetic field. How many joules work is done by magnetic force on the charged particle?
(vii)	Does a uniform magnetic field affect the K.E of an electron projected perpendicular the uniform magnetic field? Explain.
(viii)	If the resistance of Ammeter is high can it measure the accurate value of current? Explain.
(ix)	Write down the fission reaction of 235U in which fission fragments produced other than krypton and barium.
(x)	Which factor make a fusion reaction difficult achieve?
(xi)	What fraction of radioactive decays after four half life elapsed?
(xii)	Describe two methods by which an alpha particle does ionize an atom.

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

(i)	Do bends in a wire affect its electrical resistance? Explain.
(ii)	How you will compare the emf's of the two cells by using potentiometer?
(iii)	Two resistances each of 20 are connected in parallel with the source of emf of 10v. What amount of current will be supplied each resistance by the source of emf?
(iv)	Which is better device to limit the current choke and Rheostat why it better?
(v)	The peak value of alternating voltage is 220V. What is its peak to peak to peak value?
(vi)	Compare the frequency behaviour in a Resister and capacitor in a A.C Circuit.
(vii)	Write doping. What is proportion of impurity in the doping process?
(viii)	Suppose we have the substance which became super conductor at 42K, 125K and 163 K. Which is comparatively more useful?
(ix)	Show that the S.I unit of modules of elasticity and stress are same.
(x)	What is operational amplifier? Why it is so called?
(xi)	If p = 100, 1 = 10mA, then find the value of then find the value of 1, in microampere?
(xii)	Why we cannot use Silicon for making LED's?

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

(i)	Does the induced emf act to decrease the magnetic flux through a circuit? Explain.
(ii)	Write two similarities between motor and generator.
(iii)	Why split rings used in D.C generator instead of slip rings?
(iv)	On what basis the Self induced is called "back emf"?
(v)	We do not observe a Compton effect with visible light. Why?
(vi)	Can a particle and antiparticle exist together? If they meet what happen?
(vii)	Show that h/moc has dimension of length.
(viii)	What is the difference between spontaneous and stimulated emission?
(ix)	Why does electron exist outside nucleus but not inside the nucleus?

SECTION-II

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

5.(a)	State Columba's law. Derive a mathematica relation which shows Columba's force obey Newton's Third law of motion.	05
(b)	A rectangular bar of iron is 4cm by 4cm in cross section and 60cm long. Calculate its resistance if the resistivity of iron is 11×10^{-8} (ohmmeter)	03
6.(a)	What is transformer? Write its principle and construction. Derive an expression for Vs/Vp=Ns/Np.	05
(b)	A power line 15m high carries a current of 300A. Find the magnetic field of the wire at the ground.	03
7.(a)	What is inverting operational amplifier? Derive the mathematical expression for closed loop gain of the amplifier.	05
(b)	Find the value of the current and the Would Inductive Reactance when A.C voltage of 110V at 60 Hz is passed through an inductor of 10H.	03
8.(a)	What are black body radiations? Discuss the experimental results intensity distribution diagram of lummer and pringsheion.	05
(b)	A 2cm long copper wire is subjected to stretching force and its length increases by 20cm.	03
9.(a)	What is nuclear fusion? Why this reaction has not been brought under control? How sun is issuing tremendous amount if energy?	05
(b)	Find the kinetic energy of electron in first Bohr's orbit.	03