Name of Subject: **Physics – Part-II**   Group: **I**

Q. Nos	Paper Code 4471	Correct Answer	Paper Code 4473	Correct Answer	Paper Code 4475	Correct Answer	Paper Code 4477	Correct Answer
1	B	Faraday	B	$V_0/\sqrt{2}$	D	Faraday's Law	C	$10^{-3}\,ms^{-1}$
2	C	$E=\sigma/2\epsilon_0$	A	Zero	A	Becomes Zero	A	$R_s=\frac{I_g}{I-I_g}R_g$
3	C	$10^{-3}\,ms^{-1}$	C	0.7V	B	$V_0/\sqrt{2}$	B	parallel
4	A	$R_s=\frac{I_g}{I-I_g}R_g$	D	1 to 10^6	A	zero	D	Faradays Law
5	B	parallel	C	No unit	C	0.7V	A	Becomes Zero
6	D	Faraday's Law	B	900°C	D	1 to 10^6	B	$V_0/\sqrt{2}$
7	A	Becomes zero	A	Photoelectric effect	C	No unit	A	Zero
8	B	$V_0/\sqrt{2}$	D	$10^{-8}\,s$	B	900°C	C	0.7V
9	A	zero	C	$\sim 10^{-4}\,s$	A	Photoelectric effect	D	1 to 10^6
10	C	0.7V	A	Quarks	D	$10^{-8}\,s$	C	No unit
11	D	1 to 10^6	B	Faraday	C	$10^{-4}\,s$	B	900°C
12	C	No unit	C	$E=\sigma/2\epsilon_0$	A	Quarks	A	Photoelectric effect
13	B	900°C	C	$10^{-3}\,ms^{-1}$	B	Faraday	D	$10^{-8}\,s$
14	A	Photoelectric effect	A	$R_s=\frac{I_g}{I-I_g}R_g$	C	$E=\sigma/2\epsilon_0$	C	$10^{-4}\,s$
15	D	$10^{-8}\,s$	B	parallel	C	$10^{-3}\,ms^{-1}$	A	Quarks
16	C	$\sim 10^{-4}\,s$	D	Faradays Law	A	$R_s=\frac{I_g}{I-I_g}R_g$	B	Faraday
17	A	Quarks	A	Becomes Zero	B	parallel	C	$E=\sigma/2\epsilon_0$
18	/	/	/	/	/	/	/	/
19	/	/	/	/	/	/	/	/
20	/	/	/	/	/	/	/	/

Key

Prepared & Checked By: Dated: 30/05/2023

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30/05/23

Name of Subject: **Physics**   Group: **II**

Q. Nos	Paper Code 4472	Correct Answer	Paper Code 4474	Correct Answer	Paper Code 4476	Correct Answer	Paper Code 4478	Correct Answer
1	B	qE/m	A	RL circuit	B	resistor	B	Y- plate of CRO
2	C	6 sec	B	77 K	D	L-C circuit	A	Increased
3	A	± 20%	C	$V_0 = -V_{cc}$	A	R-L circuit	D	Lenz's law
4	B	Y- plate of CRO	D	No unit	B	77 K	B	Resistor
5	A	Increased	A	Red	C	$V_0 = -V_{cc}$	D	L-C circuit
6	D	Lenz's law	C	Zero	D	No unit	A	R-L circuit
7	B	Resistor	D	High energy photons	A	Red	B	77 K
8	D	L-C circuit	A	500°C	C	Zero	C	$V_0 = -V_{cc}$
9	A	R-L circuit	C/D	Four/three graphs	D	High energy photons	D	No unit
10	B	77 k	B	qE/m	A	500°C	A	Red
11	C	$V_0 = -V_{cc}$	C	6 sec	C/D	four/three graphs	C	Zero
12	D	No unit	A	± 20%	B	qE/m	D	High energy photons
13	A	Red	B	Y-plates of CRO	C	6 sec	A	500°C
14	C	Zero	A	Increased	A	± 20%	C/D	four/three graphs
15	D	High energy photons	D	Lenz's law	B	Y- plate of CRO	B	qE/m
16	A	500°C	B	Resistors	A	Increased	C	6 sec
17	C/D	Three graphs/ Four groups	D	L-C circuit	D	Lenz's law	A	± 20%
18								
19								
20								

سرٹیفکیٹ بابت صحیح سوالیہ پرچہ مارکنگ Key

ہم نے بعنوان __فزکس__ پرچہ __II میری+ثانویہ__ گروپ __II__ انٹرمیڈیٹ پہلا سالانہ امتحان 2023 6

سوالیہ پرچہ (Subjective & Objective) کو نظر ثانی و معروضی Syllabus کے مین 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 کرایا ہے۔ یہ Version آپس میں مطابقت رکھتے ہیں۔ نیز اس پرچہ میں کسی قسم کی کوئی غلطی نہ ہے۔ مزید یہ کہ ہم نے Key بنانے کے متعلق دفتر کی جانب سے تیار کردہ ہدایات کی معروضی Key (MCQs) کی بابت تصدیق کی جاتی ہے کہ اس میں بھی کسی قسم کی کوئی غلطی نہ ہے۔ اصول کرکے ان کا باہور مطالعہ کرلیا ہے اور ان کی روشنی میں Key بنائی ہے۔ نیز سب اعلیٰ امیر نیسچے تحصیلی مارکنگ سکیم Rubrics بھی تیار کردی گئی ہیں۔

Prepared & Checked By: Dated: 30/05/2023

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Re-Checked By ہم نے بالا سوالیہ پرچہ (ثانویہ + معروضی) "Key" اور ہدایات کے حوالہ سے مکمل طور پر چیک کرلی ہے۔ کسی قسم کی کوئی غلطی نہ ہے۔

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3	Kamran Khan	Assistant Prof.	Q. Alamdin Hussain Islami ASS College Multan	03156831485	

30/05/2023

PHYSICS PAPER-II GROUP-I

| 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 × 2 = 16

| (i) | State Gauss's law. | (ii) | What is the function of ECG? |

(iii) Do electrons tend to go to region of high potential or of low potential?

(iv) Draw q – t curve for charging process and from this curve define capacitive time constant.

(v) Define tesla and write relation between tesla and Gauss.

(vi) Why a voltmeter is always connected in parallel in circuit?

(vii) If the length of the solenoid is doubled by keeping number of turns constant for steady current then what should be the new value of the magnetic field?

(viii) If a charged particle moves in a straight line through some region of space, can you say that magnetic field in that region is zero?

| (ix) | Name the six quarks. | (x) | What is the function of dosimeter? |

(xi) What are isotopes? What do they have in common and what their differences?

(xii) Discuss the advantages and disadvantages of fission power from the point of safety, pollution and resources.

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

(i) Do bends in a wire affect its electrical resistance? Explain.

(ii) Describe a circuit which will give a continuously varying potential.

(iii) What is a series resistance circuit? How would equivalent resistance be calculated in such circuit?

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

(v) How the reception of a particular radio station is selected on your radio set?

(vi) What is power factor of a pure (a) resistive circuit (b) inductive circuit?

(vii) What is meant by strain energy? How can it be determined from force-extension graph?

(viii) How would you justify that Young's modulus of fluids is zero?

(ix) How existing view of magnetism forbids presence of an isolated magnetic pole?

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

(xi) Draw circuit diagram of half wave rectifier and its output waveform for sinusoidal input.

(xii) Define open loop voltage gain of an operational amplifier. What is its value for a typical operational amplifier?

4. Attempt any six parts. 6 × 2 = 12

(i) Is it possible to change both the area and the magnetic field passing through the loop and still not have an induced emf in the loop?

(ii) Can a step-up transformer increase the power level?

(iii) Why self induced emf is also called as back emf?

(iv) A beam of red light and a beam of blue light have exactly the same energy. Which beam contains the greater number of photons?

(v) Why don't we observe a Compton effect with visible light?

(vi) Describe the dual nature of energy and matter.

(vii) Which has the lower energy quanta? Radiowaves or X-rays?

(viii) Why Neon is mixed with Helium in Ne – He laser?

(ix) What do we mean when we say that the atom is excited?

SECTION-II

NOTE: Attempt any three questions. 3 × 8 = 24

5.(a)	Derive the relation for capacitance of parallel plate capacitor and hence define dielectric constant.	5
(b)	A platinum wire has resistance of 10Ω at $0°C$ and 20Ω at $273°C$. Find the value of temperature co-efficient of resistance of platinum.	3
6.(a)	Drive an expression of force on a moving charge in a magnetic field.	5
(b)	A Square coil side 16cm has 200 turns and rotates in a uniform magnetic field of magnitude 0.05T. If the peak emf is 12V. What is angular velocity of coil?	3
7.(a)	What is rectification? Draw diagram and explain working of full wave rectifier.	5
(b)	Find the value of the current and inductive reactance when A.C. voltage of 220V at 50Hz is passed through an inductor of 10H.	3
8.(a)	What is photoelectric effect? How its different results were successfully explained by Einstein?	5
(b)	A 1.0m long copper wire is subjected to stretching force and its length increases by 20cm. Calculate the tensile strain and the percent elongation which the wire undergoes.	3
9.(a)	What is mass defect and binding energy? Draw the graph between binding energy per nucleus and nucleus number. Also explain this curve.	5
(b)	Electrons in an X-ray tube are accelerated through a potential difference 3000V. If these electrons are slow down in a target, what will be the minimum wavelength of X-rays produced?	3

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) Suppose that you follow an electric field line due to a positive point charge. Do electric field increase or decrease?

(ii) If a point charge q of mass m is released in a non-uniform field with field lines pointing in the same direction, will it make a rectilinear motion?

(iii) Show that ohms times farad is equivalent to second.

(iv) What is a test charge? Write its any two characteristics.

(v) How can you use a magnetic field to separate isotopes of chemical element?

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

(vii) Define Lorentz force. Write role of each component of this force.

(viii) A proton enters this page from left to right while magnetic field is out of the page. Prove that it will be deflected towards bottom of page.

(ix) What factors make fusion reaction difficult to achieve?

(x) What is a radioactive tracer? Describe one application in medicine.

(xi) What are leptons? Name at least two leptons. | (xii) | Define nuclear activity. Write its SI unit.

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

(i) Is the filament resistance lower or higher in a 500W, 220V light bulb than in a 100W, 220V bulb?

(ii) How the bridge circuit is used to determine an unknown resistance?

(iii) Why heat is produced in a conductor due to flow of electric current?

(iv) Describe amplitude modulation with diagram.

(v) Describe the condition which will make the reactance of capacitor small.

(vi) Describe two advantages of a 3phase A.C. supply.

(vii) Differentiate between crystalline and amorphous solids.

(viii) Draw stress-strain curves for ductile and brittle materials.

(ix) How can the conductivity of a semi-conductor be raised?

(x) The anode of a diode is 0.2 volts positive with respect to its cathode. Is it forward biased?

(xi) What is the biasing requirement of the junctions of a transistor for its normal operations?

(xii) What is importance of use of a semi-conductor in electronic circuits? Explain.

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

(i) How can the spectrum of hydrogen contain so many lines, when hydrogen contain one electron?

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

(iii) Why don't we observe Compton effect with visible light?

(iv) Can an electric motor be used to drive an electric generator with the output from generator being used to operate the motor?

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

(vi) What is the importance of minus sign in the expression? $\varepsilon = -\dfrac{N\Delta\phi}{\Delta t}$

(vii) What is threshold frequency in photoelectric effect?

(viii) What do you mean by annihilation of matter? | (ix) | Write down two postulates of Bohr's theory.

SECTION-II

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

5.(a)	What is Wheatstone bridge? Explain and prove the principle of Wheatstone bridge.	5
(b)	Determine the electric field at the position $\vec{r} = (4i + 3j)\,m$ caused by a point charge $q = 5.0 \times 10^{-6}\,C$ placed at origin.	3
6.(a)	What is transformer? Derive its equation and discuss power losses in the transformer.	5
(b)	The resistance of a galvanometer is 50 ohm and reads full scale deflection with a current of 2.0 mA. Show by a diagram how to convert this galvanometer into voltmeter reading 200V full scale.	3
7.(a)	What is an operational amplifier? Describe the use of operational amplifier as non-inverting O.P. amplifier and find its gain.	5
(b)	A 10mH, 20Ω coil is connected across 240V and $180/\pi$ Hz source. How much power does it dissipate?	3
8.(a)	Derive an expression for strain energy in deformed material.	5
(b)	What is the de Broglie wavelength of an electron whose kinetic energy is 120 eV.	3
9.(a)	Write postulates of Bohr's Model. Prove that radii and energy of electron is quantized in hydrogen atom.	5
(b)	Find the mass defect and binding energy for tritium. If the atomic mass of tritium is 3.016049 U, Mass of neutron = 1.008665U, Mass of proton = 1.007276 U, Mass of electron = 0.00055 U	3

PHYSICS   PAPER-II   GROUP-I

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	The concept of an electric field was introduced by:	Henry	Faraday	Watt	Oersted
2	Electric field intensity due to an infinite sheet of charge is:	$E = \dfrac{2\sigma}{\varepsilon_o}$	$E = 2\sigma\varepsilon_o$	$E = \dfrac{\sigma}{2\varepsilon_o}$	$E = \dfrac{\sigma}{\varepsilon_o}$
3	The value of drift velocity of electrons is of the order of:	$10^3\ ms^{-1}$	$10^2\ ms^{-1}$	$10^{-3}\ ms^{-1}$	$10^{-2}\ ms^{-1}$
4	Formula for shunt resistance R_s is:	$R_s = \dfrac{I_g}{I - I_g} R_g$	$R_s = \dfrac{V_g}{I - I_g} R_g$	$R_g = \dfrac{I - I_g}{I_g} R_g$	$R_s = \dfrac{I - I_g}{I_g R_g}$
5	Voltmeter is connected in the circuit in:	Perpendicular	Parallel	Series	Anti parallel
6	The principle of an A.C. generator is base on:	Mutual Induction	Lenz's law	Self induction	Faraday's law of electromagnetic induction
7	When the motor is just started, back emf always:	Becomes zero	Decreases	Remains same	Increases
8	Root mean square value of an alternating voltage is:	$\dfrac{V_o^2}{\sqrt{2}}$	$\dfrac{V_o}{\sqrt{2}}$	$\dfrac{V_o^2}{2}$	$\dfrac{V_o}{2}$
9	Power dissipated in a pure inductor is:	Zero	Infinite	Small	Maximum
10	The value of potential barrier for silicon at room temperature is:	$0.3V$	$0.5V$	$0.7V$	$0.9V$
11	The ratio of impurity addition in an intrinsic semiconductor is:	1 to 10^3	1 to 10^4	1 to 10^5	1 to 10^6
12	SI unit of current gain of transistor is:	Coulomb	Ampere	No unit	Farad
13	When platinum wire is heated, it appears cherry red at temperature:	$500°C$	$900°C$	$1100°C$	$1300°C$
14	A photocell is base on:	Photoelectric effect	Polarization	Time dilation	Compton effect
15	Normally an electron can reside in excited state for about:	$10^{-2} s$	$10^{-4} s$	$10^{-6} s$	$10^{-8} s$
16	Dead time of the counter is:	$\sim 10^{-7} s$	$\sim 10^{-6} s$	$\sim 10^{-4} s$	$\sim 10^{-5} s$
17	The building blocks of protons and neutrons are called:	Quarks	Electrons	Protons	Ions

PHYSICS   PAPER-II   GROUP-I

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	Root mean square value of an alternating voltage is:	$\frac{V_o^2}{\sqrt{2}}$	$\frac{V_o}{\sqrt{2}}$	$\frac{V_o^2}{2}$	$\frac{V_o}{2}$
2	Power dissipated in a pure inductor is:	Zero	Infinite	Small	Maximum
3	The value of potential barrier for silicon at room temperature is:	$0.3V$	$0.5V$	$0.7V$	$0.9V$
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5	SI unit of current gain of transistor is:	Coulomb	Ampere	No unit	Farad
6	When platinum wire is heated, it appears cherry red at temperature:	$500°C$	$900°C$	$1100°C$	$1300°C$
7	A photocell is base on:	Photoelectric effect	Polarization	Time dilation	Compton effect
8	Normally an electron can reside in excited state for about:	$10^{-2}s$	$10^{-4}s$	$10^{-6}s$	$10^{-8}s$
9	Dead time of the counter is:	$\sim 10^{-7}s$	$\sim 10^{-6}s$	$\sim 10^{-4}s$	$\sim 10^{-5}s$
10	The building blocks of protons and neutrons are called:	Quarks	Electrons	Protons	Ions
11	The concept of an electric field was introduced by:	Henry	Faraday	Watt	Oersted
12	Electric field intensity due to an infinite sheet of charge is:	$E = \frac{2\sigma}{\varepsilon_o}$	$E = 2\sigma\varepsilon_o$	$E = \frac{\sigma}{2\varepsilon_o}$	$E = \frac{\sigma}{\varepsilon_o}$
13	The value of drift velocity of electrons is of the order of:	$10^3\,ms^{-1}$	$10^3\,ms^{-1}$	$10^{-3}\,ms^{-1}$	$10^{-2}\,ms^{-1}$
14	Formula for shunt resistance R_s is:	$R_s = \frac{I_g}{I - I_g} R_g$	$R_s = \frac{V_g}{I - I_g} R_g$	$R_s = \frac{I - I_g}{I_g} R_g$	$R_s = \frac{I - I_g}{I_g R_g}$
15	Voltmeter is connected in the circuit in:	Perpendicular	Parallel	Series	Anti parallel
16	The principle of an A.C. generator is base on:	Mutual Induction	Lenz's law	Self induction	Faraday's law of electromagnetic induction
17	When the motor is just started, back emf always:	Becomes zero	Decreases	Remains same	Increases

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PHYSICS   PAPER-II   GROUP-I

| 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
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3	The value of drift velocity of electrons is of the order of:	$10^3\ ms^{-1}$	$10^2\ ms^{-1}$	$10^{-3}\ ms^{-1}$	$10^{-2}\ ms^{-1}$
4	Formula for shunt resistance R_s is:	$R_s = \dfrac{I_g}{I - I_g}R_g$	$R_s = \dfrac{V_g}{I - I_g}R_g$	$R_s = \dfrac{I - I_g}{I_g}R_g$	$R_s = \dfrac{I - I_g}{I_g R_g}$
5	Voltmeter is connected in the circuit in:	Perpendicular	Parallel	Series	Anti parallel
6	The principle of an A.C. generator is base on:	Mutual Induction	Lenz's law	Self induction	Faraday's law of electromagnetic induction
7	When the motor is just started, back emf always:	Becomes zero	Decreases	Remains same	Increases
8	Root mean square value of an alternating voltage is:	$\dfrac{V_o^2}{\sqrt{2}}$	$\dfrac{V_o}{\sqrt{2}}$	$\dfrac{V_o^2}{2}$	$\dfrac{V_o}{2}$
9	Power dissipated in a pure inductor is:	Zero	Infinite	Small	Maximum
10	The value of potential barrier for silicon at room temperature is:	$0.3\,V$	$0.5\,V$	$0.7\,V$	$0.9\,V$
11	The ratio of impurity addition in an intrinsic semiconductor is:	1 to 10^3	1 to 10^4	1 to 10^5	1 to 10^6
12	SI unit of current gain of transistor is:	Coulomb	Ampere	No unit	Farad
13	When platinum wire is heated, it appears cherry red at temperature:	$500^\circ C$	$900^\circ C$	$1100^\circ C$	$1300^\circ C$
14	A photocell is base on:	Photoelectric effect	Polarization	Time dilation	Compton effect
15	Normally an electron can reside in excited state for about:	$10^{-2}\,s$	$10^{-1}\,s$	$10^{-6}\,s$	$10^{-8}\,s$
16	Dead time of the counter is:	$\sim 10^{-7}\,s$	$\sim 10^{-6}\,s$	$\sim 10^{-4}\,s$	$\sim 10^{-5}\,s$
17	The building blocks of protons and neutrons are called:	Quarks	Electrons	Protons	Ions

PHYSICS   PAPER-II   GROUP-I

| 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	Root mean square value of an alternating voltage is:	$\dfrac{V_o^2}{\sqrt{2}}$	$\dfrac{V_o}{\sqrt{2}}$	$\dfrac{V_o^2}{2}$	$\dfrac{V_o}{2}$
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3	The value of potential barrier for silicon at room temperature is:	$0.3V$	$0.5V$	$0.7V$	$0.9V$
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9	Dead time of the counter is:	$\sim10^{-7}s$	$\sim10^{-5}s$	$\sim10^{-4}s$	$\sim10^{-3}s$
10	The building blocks of protons and neutrons are called:	Quarks	Electrons	Protons	Ions
11	The concept of an electric field was introduced by:	Henry	Faraday	Watt	Oersted
12	Electric field intensity due to an infinite sheet of charge is:	$E = \dfrac{2\sigma}{\varepsilon_o}$	$E = 2\sigma\varepsilon_o$	$E = \dfrac{\sigma}{2\varepsilon_o}$	$E = \dfrac{\sigma}{\varepsilon_o}$
13	The value of drift velocity of electrons is of the order of:	$10^3\,ms^{-1}$	$10^2\,ms^{-1}$	$10^{-3}\,ms^{-1}$	$10^{-2}\,ms^{-1}$
14	Formula for shunt resistance R_s is:	$R_s = \dfrac{I_g}{I-I_g}R_g$	$R_s = \dfrac{V_g}{I-I_g}R_g$	$R_x = \dfrac{I-I_g}{I_g}R_g$	$R_s = \dfrac{I-I_g}{I_g R_g}$
15	Voltmeter is connected in the circuit in:	Perpendicular	Parallel	Series	Anti parallel
16	The principle of an A.C. generator is base on:	Mutual Induction	Lenz's law	Self induction	Faraday's law of electromagnetic induction
17	When the motor is just started, back emf always:	Becomes zero	Decreases	Remains same	Increases

PHYSICS   PAPER-II   GROUP-II

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

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S.#	QUESTIONS	A	B	C	D
1	If a positive charged particle of mass "m" is projected parallel to uniform electric field $\vec{E}$, The acceleration of the particle is:	Zero	$\dfrac{q\vec{E}}{m}$	$qm\vec{E}$	$\dfrac{\vec{E}}{qm}$
2	A $3K\Omega$ resistor is connected in series with a capacitor of capacitance 2mF. The time constant for capacitor is:	1 sec	5 sec	6 sec	1.33 sec
3	If no fourth band is present on a carbon resistor then its tolerance will taken:	$\pm 20\%$	$\pm 10\%$	$\pm 5\%$	0%
4	To display the given voltage along Y – axis on C.R.O, connected to it:	X – plates of C.R.O.	Y – plates of C.R.O.	Cathode of C.R.O.	Anodes of C.R.O.
5	If we want to increase the measuring range of voltmeter, the series high resistance value should be:	Increased	Decreased	Kept constant	Zero
6	The direction of induced current in a circuit is determined by:	Ohm's law	Faraday's law	Gauss's law	Lenz's law
7	For alternating current in a circuit, the inductor behaves like:	Thermistor	Resistor	Capacitor	Rectifier
8	Metal detectors consist of:	$R – C$ circuit	$R – L$ circuit	RLC series circuit	$L – C$ circuit
9	At high frequency, RLC series circuit shows the behaviour as:	$R – L$ circuit	Pure inductive circuit	$R – C$ circuit	Pure capacitive circuit
10	High temperature super conductors have a critical temperature greater than:	52K	77K	125K	163K
11	In, Op-amp as a comparator when $V_+ > V_+$ then at the output we get:	$V_o = +V_{CC}$	$V_o = 0$	$V_o = -V_{CC}$	$V_o = \infty$
12	The SI unit of current gain are:	Ampere	Ohm	Gray	No unit
13	Which photon of light has least energy?	Red	Yellow	Blue	Green
14	The rest mass of photon is:	$9.1 \times 10^{-3}\,kg$	$1.67 \times 10^{-27}\,kg$	Zero	Infinity
15	X – rays are:	High energy electrons	High energy neutrons	High energy protons	High energy photons
16	Heat produced due to fission reaction taking place in the core of Nuclear reactor is about:	$500^\circ C$	$900^\circ C$	$1100^\circ C$	$1300^\circ C$
17	Subatomic particles are divided into:	Six groups	Five groups	Four groups	Three groups

Paper Code	2023 (1ˢᵗ-A)	Roll No: _____
Number: 4474	INTERMEDIATE PART-II (12ᵗʰ Class)	

PHYSICS   PAPER-II   GROUP-II

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S.#	QUESTIONS	A	B	C	D
1	At high frequency, RLC series circuit shows the behaviour as:	R – L circuit	Pure inductive circuit	R – C circuit	Pure capacitive circuit
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3	In, Op-amp as a comparator, when $V_- > V_+$, then at the output we get:	$V_o = + V_{CC}$	$V_o = 0$	$V_o = - V_{CC}$	$V_o = \infty$
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PHYSICS   PAPER-II   GROUP-II

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Paper Code Number: **4478**	2023 (1st-A) INTERMEDIATE PART-II (12th Class)	Roll No: _____

PHYSICS   PAPER-II   GROUP-II

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