# BOARD OF INTERMEDIATE AND SECONDARY EDUCATION, MULTAN OBJECTIVE KEY FOR INTERMEDIATE ANNUAL EXAMINATION, 2021

Name of	Subject:	Physics	Session	*6
Crown			2021	
Group:	1st		Group' 2nd	

	Q.	Paper Code	Paper Code	Paper Code	Paper Code
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سر شفکیٹ بابت تھیج سوالیہ پر چید امار کنگ Key فَرُكُ لِي الزمادي النامة الاندامة ال ١٠٠٠ كيم الزميذي مالاندامة ال 2021 كا

سوالیہ پرچہ انشائیہ ومعروضی (Subjective & Objective) کو بنظر عمیق چیک کرلیا ہے یہ پرچہ ALP Syllabus کیا گیا ہے۔ اس سوالیہ پر چہ میں کسی قتم کی کوئی غلطی نہ ہے ۔ ہم نے سوالیہ پر چہ کا اردو اور انگریز Version بھی چیک کرلیا ہے۔ یہ Version آپس میں مطابقت رکھتے ہیں۔ نیز اس پر چہ کی معروضی (Key (MCQs کی بابت تصدیق کی جاتی ہے کہ اس میں بھی کسی قتم کی کوئی غلطی نہ ہے۔ مزید ریہ کہ ہم نے Key وصول کر کے ان کا بغور مطالعہ کرلیا ہے اور ان کی روشیٰ میں Key بنائی ہے۔ نیز سب ایگزامیز زکیلئے تفصیلی مارکنگ ہدایات/ مارکنگ سیم/Rubrics بھی تیار کر دی گئی ہیں۔

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ہم نے درج بالاسواليہ ير حد (انثا كيه + معروضي) معروضي "Key" اور بدايات كے حوالہ سے كمل طور پرتسلى كر لى ہے - كسي تم كى كو كَا غلطى نہ ہے۔

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## INTERMEDIATE PART-II (12th CLASS)

## PHYSICS PAPER-II

GROUP-I

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-I

#### 2. Attempt any eight parts.

 $8 \times 2 = 16$ 

- (i) Electric lines of force never cross. Explain why?
- (ii) If a point charge 'q' of mass m is released in a non-uniform electric field with field lines pointing in the same direction, will it make a rectilinear motion?
- (iii) Prove that  $1 \frac{volt}{meter} = 1 \frac{Newton}{Coulomb}$
- (iv) A particle carrying a charge of 2e falls through a potential difference of 3.0V. Find energy acquired by it.
- (v) How can you use a magnetic field to separate isotopes of chemical element?
- (vi) If a charged particle moves in a straight line through some region of space, can you say that magnetic field in the region is zero?
- (vii) Draw Saw tooth voltage waveform and explain it.
- (viii) Define magnetic flux and one Tesla.
- (ix) Does the induced emf in a circuit depend on the resistance of the circuit?
- (x) How would you position a flat loop of wire in a changing magnetic field, so that there is no *emf* induced in the loop?
- (xi) A metal rod of length 25cm is moving at speed of 0.5m/s in a direction perpendicular to a 0.25T magnetic field. Find the *emf* produced in the rod.
- (xii) Define motional emf and write its mathematical expression.

### 3. Attempt any eight parts.

 $8 \times 2 = 16$ 

- (i) Do bends in a wire affect its electrical resistance? Explain.
- (ii) Why does the resistance of a conductor rise with temperature?
- (iii) State Kirchhoff's Second Rule and write its equation.
- (iv) In a R-L circuit will the current lag or lead the voltage? Illustrate your answer by a vector diagram.
- (v) How does doubling the frequency affect the reactance of (a) an inductor (b) a capacitor
- (vi) Write four properties of parallel resonance circuit.
- (vii) Distinguish between ductile and brittle substances.
- (viii) Define modulus of elasticity. Show that the units of modulus of elasticity and stress are the same.
- (ix) Write a brief note on superconductor.
- (x) What is rectification, write its two types.
- (xi) Why is the base current in a transistor very small?
- (xii) Why ordinary silicon diodes do not emit light?

#### 4. Attempt any six parts.

 $6 \times 2 = 12$ 

- (i) Discuss the variation of photoelectric current with the intensity of light falling on plate of photocell.
- (ii) Which photon, red, green or blue carries the most (a) energy and (b) momentum.
- (iii) What advantages an electron microscope has over an optical microscope?

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- (iv) What are characteristic X-rays? How are they originated from the atoms?
- (v) Can the electron in the ground state of hydrogen absorb a photon of energy  $13.6 \, eV$  and greater than  $13.6 \, eV$ ?
- (vi) Why is the mass of a nucleus less than the total mass of constituent particles? Where is this mass lost?
- (vii) What is the difference between hadrons and leptons?
- (viii) A particle which is more ionizing is less penetrating. Why?
- (ix) What do you understand by "back ground radiation"? State two sources of this radiation.

#### **SECTION-II**

NOTE:	Attempt any three questions.	$3 \times 8 = 24$
5.(a)	Derive an expression for the energy stored in the capacitor.	5
(b)	The potential difference between the terminals of a battery in open circuit is $2.2V$ . When it is connected across a resistance of $5.0\Omega$ . The potential falls to $1.8V$ . Calculate the current and the internal resistance of the battery.	3
6.(a)	Define self induction. Prove that in case of inductor, the energy density is directly proportional to the square of magnetic field.	5
(b)	A power line $10m$ high carries a current $200A$ . Find the magnetic field of the wire at	the ground.
7.(a) (b)	Describe A.C through R-C series circuit. In a circuit, the transistor has a current $10mA$ at collector and base current $40\muA$ . What is the current gain of the transistor?	3
8.(a)	What are intrinsic and extrinsic semiconductors? How the $P$ - type and $N$ - type materials are formed?	5
(b)	Calculate the energy (in $MeV$ ) released in the following fusion reaction: ${}_{1}^{2}H + {}_{1}^{3}H \longrightarrow {}_{2}^{4}He + {}_{0}^{1}n$	3
9.(a)	What is photoelectric effect? Write two results of this effect which cannot be explain by classical electromagnetic theory. Explain them on the basis of quantum theory.	ned 5
(b)	A tungsten target is struck by electron that have been accelerated from rest through 40 potential difference. Find the shortest wavelength of the bremsstrahlung radiation em	

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## INTERMEDIATE PART-II (12th CLASS)

PHYSICS PAPER-II GF	OIII	1_0
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TIME ALLOWED: 20 Minutes

**OBJECTIVE MAXIMUM MARKS: 17** 

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

Q.No.1

(1)	sec ohm is equal to:			
	(A) Coulomb	(B) Farad	(C) Joule	

(D) Ampere

S.I unit of electric flux is: (2)(A)  $NC^{-1}$ 

(B)  $Nm^2C^{-1}$ 

(3)A thermistor is a heat sensitive:

(A) Resistor

(B) Capacitor

(C) Inductor

(D) Diode

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

(A) Wbm

(B)  $Wb \, m^{-1}$ 

(C)  $Wb m^{-2}$ 

(D)  $Wb m^{-3}$ 

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

(A) 10

(B) 20

(C) 100

(D). 1000

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

(A) Mutual induction

(B) Self induction

(C) Electromagnetic induction (D) All of these

(7)Energy density in inductor is given by:

(B)  $\frac{1}{2} \frac{B}{u_0^2}$ 

(C)  $\frac{1}{2} \frac{B^2}{u_0^2}$  (D)  $\frac{1}{2} \frac{B^2}{u_0}$ 

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

(A) Capacitor

(B) Resistor

(C) Inductor

(D) Generator

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

(A)  $X_C > X_L$ 

(B)  $X_L > X_C$ 

(C)  $X_L >> X_C$ 

(D)  $X_L = X_C$ 

The Curie temperature for iron is: (10)

(A) 923 K

(B) 1023 K

(C) 823 K

(D) 723 K

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

(C) 1

(D) Infinite

The current gain " $\beta$ " of a transistor is given by: (12)

(A)  $\frac{I_C}{I_B}$ 

(B)  $\frac{I_E}{I_C}$  (C)  $\frac{I_B}{I_C}$ 

The rest mass of X – ray photon is (13)

(A)  $1.6 \times 10^{-19} kg$ 

(B)  $9.1 \times 10^{-31} kg$  (C)  $1.67 \times 10^{-27} kg$ 

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

(A) 900°C

(B)  $1100^{\circ}C$ 

(C) 1300°C

(D)  $1600^{\circ}C$ 

The value of Rydberg constant is: (15)

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

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

(16)When  $\gamma$  -rays are emitted, the nuclear mass of an element:

(A) Increases by 2 units

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

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

(A) Baryons

(B) Hadrons

(C) Fermions

(D) Mesons

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## INTERMEDIATE PART-II (12th CLASS)

#### **PHYSICS** PAPER-II 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 bubble in front of that question number, on bubble sheet. Use marker or pen to fill the bubbles. Cutting or filling two or more bubbles will result in zero mark in that question. No credit will be awarded in case BUBBLES are not filled. Do not solve question on this sheet of OBJECTIVE PAPER.

#### Q.No.1

For non-inverting amplifier, if  $R_1 = \infty ohm$ ,  $R_2 = 0 ohm$  then gain of amplifier is: (1)

- (C) 1

(D) Infinite

The current gain " $\beta$ " of a transistor is given by: (2)

(A)  $\frac{I_C}{I_R}$ 

- (B)  $\frac{I_E}{I_C}$  (C)  $\frac{I_B}{I_C}$

(3) The rest mass of X – ray photon i

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

When platinum wire is heated, it becomes white at temperature: (4)

- (A) 900°C
- (B)  $1100^{\circ}C$
- (C)  $1300^{\circ}C$

(D)  $1600^{\circ}C$ 

(5) The value of Rydberg constant is:

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

When  $\gamma$  -rays are emitted, the nuclear mass of an element: (6)

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

The particles equal in mass or greater than proton are: (7)

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

 $\frac{\sec}{\sinh}$  is equal to: (8)

- (A) Coulomb
- (B) Farad
- (C) Joule

(D) Ampere

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

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

(D)  $NmC^2$ 

A thermistor is a heat sensitive: (10)

- (A) Resistor
- (B) Capacitor
- (C) Inductor

(D) Diode

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

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

(D)  $Wb m^{-3}$ 

If 300 turns of wire are wound on 30cm length, then number of turns per unit length is: (12)

- (B) 20
- (C) 100

(D) 1000

The principle of A.C generator is: (13)

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

(14)Energy density in inductor is given by:

- (B)  $\frac{1}{2} \frac{B}{\mu_0^2}$
- (C)  $\frac{1}{2} \frac{B^2}{\mu_0^2}$

(D)  $\frac{1}{2} \frac{B^2}{u}$ 

The device which allows only the flow of D.C is: (15)

- (A) Capacitor
- (B) Resistor
- (C) Inductor

(D) Generator

In R.L.C series circuit resonance occurs when: (16)

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

(17)The Curie temperature for iron is:

- (A) 923 K
- (B) 1023 K
- (C) 823 K

(D) 723 K

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	YSICS te: You I	PAPER-II	OBJEC ces for each objective type	e question as A. R.	TIME ALLOWED: 20 Minute MAXIMUM MARKS: 17 C and D. The choice which you er, on bubble sheet. Use marker
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Q.N (1)		vice which allo	ows only the flow of D.C is	5 11 5	
		pacitor	(B) Resistor	(C) Inductor	(D) C
(2)			t resonance occurs when:	(C) inductor	(D) Generator
		$X_C > X_L$	(B) $X_L > X_C$	(C) V V	(D) V - V
(3)				(c) $\Lambda_L >> \Lambda_C$	$(D) X_L = X_C$
(3)	(A) 92	urie temperatur			
(4)			(B) 1023 K	(-)	(D) 723 K
(4)		n-inverting am	plifier, if $R_1 = \infty ohm$ , $R$	$_2 = 0 ohm$ then gain	n of amplifier is:
/ E \	(A) 2		(B) 0	(C) 1	(D) Infinite
(5)			of a transistor is given by:		
	(A) $\frac{I_C}{I_R}$		(B) $\frac{I_E}{I_C}$	(C) $\frac{I_B}{I_C}$	(D) $\frac{I_E}{I_E}$
(6)	D	st mass of $X$ –	-(-	$I_C$	$I_B$
			(B) $9.1 \times 10^{-31} kg$	(C) $1.67 \times 10^{-2}$	ha (D) Zara
(7)			s heated, it becomes white		kg (D) Zero
	(A) 900	)° C	(B) $1100^{\circ}C$	(C) 1300° C	(D) 1600°C
(8)	The val	ue of Rydberg	constant is:	(1) 1111	(B) 1000 C
		$974 \times 10^7  m^{-1}$		$n^{-1}$ (C) 1.0974 × 1	$0^{11}m^{-1}$ (D) $1.0974 \times 10^{-11}m^{-1}$
(9)	When y	– rays are emi	tted, the nuclear mass of ar		
		eases by 2 unit			s by 4 units (D) Does not change
(10)	The part	ticles equal in r	nass or greater than proton	are:	b by Tames (D) Does not change
	(A) Bar		(B) Hadrons	(C) Fermions	(D) Mesons
(11)	sec is	equal to:		(-)	(D) Mesons
	ohm (A) Cot		(D) F1	(6)	
12)		of electric flux	(B) Farad	(C) Joule	(D) Ampere
,	(A) <i>NC</i>		(B) $Nm^2C^{-1}$	(C) $NmC^{-1}$	(D) $NmC^2$
13)	A therm	istor is a heat s	50 <b>% &amp;</b> 0	(C) Nine	(D) NMC
	(A) Resi		(B) Capacitor	(C) Inductor	(D) Diede
14)	S.I unit o	of magnetic flu		(C) Inductor	(D) Diode
	(A) $Wbn$		(B) $Wb m^{-1}$	(C) $Wb m^{-2}$	(D) $Wb m^{-3}$
15)	If 300 tu	rns of wire are	wound on 30cm length, the	en number of turns	per unit length is:
	(A) 10		(B) 20	(C) 100	(D) 1000
16)	The prin	ciple of A.C go	enerator is:		9 N X
	(A) Mut	ual induction	(B) Self induction	(C) Electromagne	etic induction (D) All of these
17)			tor is given by:		( )
	$(A) \ \frac{1}{2} \frac{B}{\mu_0}$	<b>-</b>	(B) $\frac{1}{2} \frac{B}{\mu_0^2}$	(C) $\frac{1}{2} \frac{B^2}{\mu_0^2}$	(D) $\frac{1}{2} \frac{B^2}{\mu_0}$

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# INTERMEDIATE PART-II (12th CLASS)

<b>PHYSICS</b>	PAPER-II	GROUP-I
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TIME ALLOWED: 20 Minutes **MAXIMUM MARKS: 17** 

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

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

(A) 10

(B) 20

(C) 100

(D) 1000

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

(A) Mutual induction

(B) Self induction

(C) Electromagnetic induction (D) All of these

Energy density in inductor is given by: (3)

(C)  $\frac{1}{2} \frac{B^2}{\mu_2^2}$ 

(D)  $\frac{1}{2} \frac{B^2}{\mu_0}$ 

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

(A) Capacitor

(B) Resistor

(C) Inductor

(D) Generator

In R.L.C series circuit resonance occurs when: (5)

(A)  $X_C > X_L$ 

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

The Curie temperature for iron is: (6)

(A) 923 K

(B) 1023 K

(C) 823 K

For non-inverting amplifier, if  $R_1 = \infty ohm$ ,  $R_2 = 0 ohm$  then gain of amplifier is: (7)

(A) 2

(C) 1

(D) Infinite

The current gain " $\beta$ " of a transistor is given by: (8)

(B)  $\frac{I_E}{I_C}$ 

(C)  $\frac{I_B}{I_C}$ 

(D)  $\frac{I_E}{I_B}$ 

The rest mass of X – ray photon is: (9)

(A)  $1.6 \times 10^{-19} kg$ 

(B)  $9.1 \times 10^{-31} kg$  (C)  $1.67 \times 10^{-27} kg$ 

(D) Zero

When platinum wire is heated, it becomes white at temperature: (10)

(A) 900°C

(B)  $1100^{\circ}C$ 

(C) 1300°C

(D) 1600°C

The value of Rydberg constant is: (11)

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

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

When  $\gamma$  -rays are emitted, the nuclear mass of an element: (12)

(A) Increases by 2 units

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

The particles equal in mass or greater than proton are: (13)

(A) Baryons

(B) Hadrons

(C) Fermions

(D) Mesons

 $\frac{\sec}{\sinh}$  is equal to: (14)

(A) Coulomb

(B) Farad

(C) Joule

(D) Ampere

S.I unit of electric flux is: (15)

(A)  $NC^{-1}$ 

(B)  $Nm^2C^{-1}$ 

(C)  $NmC^{-1}$ 

(D)  $NmC^2$ 

(16)A thermistor is a heat sensitive:

(A) Resistor

(B) Capacitor

(C) Inductor

(D) Diode

S.I unit of magnetic flux density is: (17)

(A) Wbm

(B)  $Wbm^{-1}$ 

(C)  $Wb m^{-2}$ 

(D)  $Wb \, m^{-3}$ 

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## INTERMEDIATE PART-II (12th CLASS)

PHYSICS PAPER-II GROUP-II

SUBJECTIVE

TIME ALLOWED: 2.40 Hours

MAXIMUM MARKS: 68

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) How can you identify that which plate of capacitor is positively charged?
- (ii) Is  $\vec{E}$  necessarily zero inside a charged rubber balloon if balloon is spherical? Assume that charge is distributed uniformly over the surface.
- (iii) Define surface charge density. Also give its S.I unit.
- (iv) Describe the change in the magnetic field inside a solenoid carrying a steady current I, if (a) length of solenoid is doubled but number of turns remains same and
  - (b) the number of turns is doubled but length remains the same.
- (v) What are dissimilarities between electric and gravitational forces?
- (vi) Two charged particles are projected into a region where there is a magnetic field perpendicular to their velocities. If the charges are deflected in opposite directions, what can you say about them?
- (vii) Write down the main parts of C.R.O.
- (viii) Define magnetic induction, also define its unit.
- (ix) How would you position a flat loop of wire in a changing magnetic field so that there is no *emf* induced in the loop?
- (x) Is it possible to change both the area of the loop and the magnetic field passing through the loop and still not have an induced *emf* in the loop?
- (xi) Name the factors upon which self inductance depends?
- (xii) Write down two methods for producing the induced *emf* in a loop.

3. Attempt any eight parts.

 $8 \times 2 = 16$ 

- (i) Do bends in a wire affect its electrical resistance? Explain.
- (ii) Why does the resistance of a conductor rise with increase of temperature?
- (iii) Write two uses of potentiometer.
- (iv) A sinusoidal current has rms value of 10 A. What is maximum or peak value?
- (v) In a R-L circuit, will the current lag or lead the voltage? Illustrate your answer by a vector diagram.
- (vi) What is the advantage of three phase A.C supply over single phase A.C?
- (vii) Distinguish between crystalline, amorphous and polymeric solids.
- (viii) What are superconductors? Write its two applications.
- (ix) Why does doping not change the basic structure of the solid? Explain.
- (x) Why does light emitting diodes emit visible light?
- (xi) What is the net charge on a n type or a p type substance?
- (xii) Why ordinary silicon diodes do not emit light?

4. Attempt any six parts.

 $6 \times 2 = 12$ 

- (i) Will bright light eject more electrons from a metal surface than dimmer light of the same colour?
- (ii) Will higher frequency light eject greater number of electrons than low frequency light?
- (iii) Write the name of any four applications of photocell.



- (iv) Write any two uses of Laser in medicine and industry.
- (v) What do we mean when we say that the atom is excited?
- (vi) What is fission chain reaction?
- (vii) For what purpose, bromine is mixed with principal gas in Geiger tube?
- (viii) What information is revealed by the length and shape of the tracks of an incident particle in Wilson cloud chamber?
- (ix) What factors make a fusion reaction difficult to achieve?

## **SECTION-II**

NOTE:	Attempt any three questions.	$3\times8=24$	
5.(a)	Compare the properties of electric and gravitational force.	5	
(b)	A platinum wire has resistance of $10\Omega$ at $0^{\circ}C$ and $20\Omega$ at $273^{\circ}C$ . Find the value of temperature co-efficient of resistance of platinum.	3	
6.(a)	Define mutual induction. Also derive an expression for induced emf in the secondary	coil. 5	
(b)	A coil of $0.1m \times 0.1m$ and of 200 turns carrying a current of $1.0mA$ is placed in a uniform magnetic field of $0.1T$ . Calculate the maximum torque that acts on the coil.	3	
7.(a)	What is operational amplifier. Derive the relation for the gain of non-inverting amplifier.	ier. 5	
(b)	Find the value of current flowing through a capacitance $0.5\muF$ . When connected to a source of $150V$ at $50Hz$	3	
		(46)	
8.(a)	What is fusion reaction? Discuss in detail. What is the major source of heat and light	in the Sun? 5	5
(b)	What stress would cause a wire to increase in length by 0.01% if the Young's modulu $12 \times 10^{10}$ Pa? What force would produce this stress if the diameter of the wire is 0.56	s of the wire is mm? 3	
9.(a)	What is photoelectric effect? Explain it on the basis of quantum theory.	5	
(b)	Find the speed of the electron in the first Bohr's orbit.	3	

20-2021(A)-12000 (MULTAN)

					s 9
Pape	r Code		2021 (A	.) Ro	oll No
Num	ber:	4472	INTERMEDIATE PA	ART-II (12 <sup>th</sup> CLA	ASS)
PHY	SICS	PAPER-II	GROUP-II <u>OBJEC</u> T		ME ALLOWED: 20 Minutes AXIMUM MARKS: 17
Note:	think or per quest	is correct, fill n to fill the bu ion. No credit	ces for each objective type that bubble in front of tha bbles. Cutting or filling tw	question as A, B, C at question number, wo or more bubbles	and D. The choice which you on bubble sheet. Use marker will result in zero mark in that ed. Do not solve question on
Q.No.1		1 .			
(1)			n in an electric field of magn		
	(A) 1.	$9 \times 10^{-15} N$	(B) $1.6 \times 10^{-15} N$	(C) $1.6 \times 10^{-8} N$	(D) $1.8 \times 10^{-15} N$
(2)	The to	otal electric flux	x through any closed surface	depends upon:	
	(A) C	Charge	(B) Medium	(C) Geometry of c	closed surface (D) Both A and B
(3)	Heat g	generated by a	50 watt bulb in one hour is:		
	(A) 36	5000 J	(B) $48000 J$	(C) 1800 J	(D) 180000 J
(4)	One T (A) 1.	esla(T) is equa NA <sup>-1</sup>	l to: (B) 1 Nm <sup>-1</sup>	(C) $1NA^{-1}m$	(D) $1NA^{-1}m^{-1}$
(5)	A 5 m The fo	eter wire carry orce on the wire	ing a current of 2 <i>A</i> is at rigle is:	ht angle to uniform m	agnetic field of 0.5 Tesla.
	(A) 5	N	(B) 4N	(C) 2N	(D) 1.5 <i>N</i>
(6)	Lenz's	s law is in acco	rdance with the law of conse	ervation of:	
	(A) N	lass	(B) Momentum	(C) Energy	(D) Charge
(7)	The en	nf induced in 1	mH inductor in which curre	ent changes from 5A	to $3A$ in $1ms$ is:
		$\times 10^{-6} V$	(B) 2V	(C) $6 \times 10^{-6} V$	(D) 8V
(8)	Curre	nt leads the app	lied voltage in pure	circuit.	
	(A) Re	esistive	(B) Capacitive	(C) Inductive	(D) Reactive
(9)	The Sl	unit of Imped	ance is:		
	(A) H	enry	(B) Hertz	(C) Ohm	(D) Volt
(10)	Which	one of the foll	owing is the example of cry	stalline solid?	ä
	(A) Pla	astic	(B) Glass	(C) Rubber	(D) Zirconia
(11)	Which	component of	the transistor has greater co	ncentration of impuri	ty?
	(A) Ba	ise	(B) Emitter	(C) Collector	(D) Resistor
(12)	In full	wave rectificat	ion, the numbers of diodes r	equired is:	
	(A) 4		(B) 3	(C) 1	(D) 5
(13)	Plank'	s constant 'h' l	has the same unit as that of:		
	(A) Ar	ngular momenti	um (B) Linear velocity	(C) Torque	(D) Power
(14)		$m_0c$	the dimension of:		
	(A) Ma		(B) Time	(C) Length	(D) Power
(15)			it of hydrogen atom in nm is	s:	
	(A) 0.5		(B) 51.3	(C) 5.3	(D) 53
			er nucleon is maximum for:		
	(A) Iro		(B) Helium	(C) Radium	(D) Copper
(17)	Which	of the following	ng is highly penetrating?		

(B)  $\gamma$  -rays

(A)  $\alpha$  – particles

(D)  $\beta$  – particles

(C) X – rays

Paper Code	
Number:	4474
PHYSICS	PAPER-I

(A) Resistive

# 2021 (A)

Roll No.

## INTERMEDIATE PART-II (12th CLASS)

PHYSICS	PAPER-II	<b>GROUP-II</b>
	A LAK AJAK AA	ONOUL "II

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

**OBJECTIVE** 

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

~ ~ ~	this sheet of OBJECTIV	E PAPER.		1
<b>Q.No</b> (1)	The SI unit of Impedance	is:		
	(A) Henry	(B) Hertz	(C) Ohm	(D) Volt
(2)	Which one of the followin	g is the example of cry	5 (6)	(=) . 011
	(A) Plastic	(B) Glass	(C) Rubber	(D) Zirconia
(3)	Which component of the t	ransistor has greater co	STATES AND THE TOTAL STATES AND THE	(B) Enrollia
	(A) Base	(B) Emitter	(C) Collector	(D) Resistor
(4)	In full wave rectification,	the numbers of diodes r	20 (5)	(2) 110515101
	(A) 4	(B) 3	(C) 1	(D) 5
(5)	Plank's constant 'h' has th	ne same unit as that of:		
	(A) Angular momentum	(B) Linear velocity	(C) Torque	(D) Power
(6)	The factor $\frac{h}{m_0 c}$ has the d			(2)10,01
	(A) Mass	(B) Time	(C) Length	(D) Power
(7)	The radius of 10 <sup>th</sup> orbit of	hydrogen atom in <i>nm</i> is	s:	
	(A) 0.53	(B) 51.3	(C) 5.3	(D) 53
(8)	The binding energy per nuc	cleon is maximum for:		
	(A) Iron	(B) Helium	(C) Radium	(D) Copper
(9)	Which of the following is l	nighly penetrating?		
	(A) $\alpha$ – particles	(B) $\gamma$ - rays	(C) $X$ – rays	(D) $\beta$ – particles
(10)	The force on electron in an	electric field of magni	tude $10^4 NC^{-1}$ is:	
	(A) $1.9 \times 10^{-15} N$	(B) $1.6 \times 10^{-15} N$	(C) $1.6 \times 10^{-8} N$	(D) $1.8 \times 10^{-15} N$
(11)	The total electric flux throu	igh any closed surface	depends upon:	
	(A) Charge	(B) Medium	(C) Geometry of closed sur	face (D) Both A and B
(12)	Heat generated by a 50 wat	t bulb in one hour is:		
*	(A) $36000 J$	(B) $48000 J$	(C) 1800 J	(D) $180000 J$
(13)	One Tesla(T) is equal to: (A) 1 NA <sup>-1</sup>	(B) 1 Nm <sup>-1</sup>	(C) 1NA <sup>-1</sup> m	(D) $1 NA^{-1}m^{-1}$
(14)	A 5 meter wire carrying a c The force on the wire is:	current of 2A is at right	t angle to uniform magnetic fi	eld of 0.5 Tesla.
	(A) 5 <i>N</i>	(B) 4N	(C) 2N	(D) 1.5 <i>N</i>
(15)	Lenz's law is in accordance	with the law of conser	vation of:	
	(A) Mass	(B) Momentum	(C) Energy	(D) Charge
(16)	The $emf$ induced in $1mH$ in	ductor in which curren	t changes from 5A to 3A in	
	(A) $2 \times 10^{-6} V$	(B) 2V	(C) $6 \times 10^{-6} V$	(D) 8V
(17)	Current leads the applied vo	oltage in pure	circuit.	

(B) Capacitive

(D) Reactive

(C) Inductive

Paper	Code			2021 (A)		Roll No.	191
1	-	4476	INTERME	DIATE PAR	T-II (12 <sup>th</sup> C	THE RESERVE OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLUMN TW	
Numb PHYS			GROUP-II			TIME ALLO	OWED: 20 Minutes
	You hathink is or pen question	ave four choics is correct, fill to fill the bu on. No credit	ces for each ob that bubble in bbles. Cutting	OBJECTIVE jective type que front of that que or filling two ed in case BUB	estion as A, B uestion numb or more bubbl	C and D. The er, on bubble s es will result in	MARKS: 17 e choice which you sheet. Use marker n zero mark in that t solve question on
Q.No.1							
(1)		of induced in 1 $\times 10^{-6} V$	I <i>mH</i> inductor in (B) 21		changes from (C) $6 \times 10^{-6} V$	5A to $3A$ in $1n$	ns is: (D) 8V
(2)	Curren	t leads the app	olied voltage in	pure	_ circuit.		
	(A) Re			pacitive			(D) Reactive
(3)	The SI	unit of Imped	lance is:				
	(A) He	enry	(B) He	ertz	(C) Ohm	*	(D) Volt
(4)	Which	one of the fol	lowing is the ex	kample of cryst	alline solid?		
	(A) Pla	astic	(B) Gl	ass	(C) Rubber		(D) Zirconia
(5)	Which	component of	f the transistor	nas greater conc	centration of im	purity?	
	(A) Ba	ise	(B) Er	nitter	(C) Collector		(D) Resistor
(6)	In full	wave rectifica	ition, the numb	ers of diodes re	quired is:		
	(A) 4		(B) 3		(C) 1		(D) 5
(7)	Plank'	s constant 'h'	has the same u	nit as that of:			
				near velocity	(C) Torque		(D) Power
(8)	The fa	ctor $\frac{h}{m_0 c}$ has	s the dimension	of:			
	(A) Ma	ass	(B) Ti	me	(C) Length		(D) Power
(9)	The ra	dius of 10 <sup>th</sup> or	bit of hydroger	atom in nm is:			
	(A) 0.5	53	(B) 51	.3	(C) 5.3		(D) 53
(10)	The bi	nding energy	per nucleon is i	naximum for:			
	(A) Iro	on	(B) He	elium	(C) Radium		(D) Copper
(11)	Which	of the follow	ing is highly pe	netrating?			
	(A) α	– particles	(B) γ	-rays	(C) $X$ – rays		(D) $\beta$ – particles
(12)	The fo	orce on electro	n in an electric	field of magnit	ude $10^4 NC^{-1}$ i	s:	
	(A) 1.5	$9 \times 10^{-15} N$	(B) 1.	$6 \times 10^{-15} N$	(C) $1.6 \times 10^{-8}$	$^{3}N$	(D) $1.8 \times 10^{-15} N$
(13)	The to	tal electric flu	x through any	closed surface d	lepends upon:		
X 2	(A) C			edium		of closed surfa	ace (D) Both A and B
(14)	Heat g	generated by a	50 watt bulb in	one hour is:			
	(A) 36	5000 J	(B) 48	3000 J	(C) 1800 J		(D) 180000 J
(15)	One T (A) 17	esla(T) is equ		$Nm^{-1}$	(C) 1NA <sup>-1</sup> m		(D) $1NA^{-1}m^{-1}$
(16)		eter wire carry		f 2A is at right	angle to unifor	rm magnetic fie	eld of 0.5 Tesla.
	(A) 5	N	(B) 4	N	(C) 2N		(D) 1.5 <i>N</i>
(17)	Lenz's	s law is in acc	ordance with th	e law of conser	vation of:		

(B) Momentum

(A) Mass

(C) Energy (D) Charge

Pan	er Čode		2021.6	A.)		lar
		1170	INTERMEDIATE P	A) PART-II (12 <sup>th</sup> (	Roll No.	per
	nber:	44/8		AK1-11 (12 (	LASS)	
PHY	SICS	PAPER-II			TIME AL	LOWED: 20 Minutes
Note	: You b	ave four choic	OBJECT	<u> </u>	MAXIMI	IM MADEC. 17
	or per questi	to fill the bul on. No credit	ces for each objective type that bubble in front of the bbles. Cutting or filling twill be awarded in case BCTIVE PAPER.	at question numbers	ber, on bubb	le sheet. Use marker
Q.No	.1					
(1)	(A) 11	esla(T) is equa		1		
(2)	7		(B) $1 Nm^{-1}$	(-)		(D) $1NA^{-1}m^{-1}$
(2)	The fo	rce on the wire	ing a current of $2A$ is at rige is:	ght angle to unifor	m magnetic i	field of 0.5 Tesla.
	(A) 5		(B) 4N	(C) 2N		(D) 1.5 <i>N</i>
(3)	Lenz's	law is in accor	rdance with the law of cons	servation of:		
	(A) M	ass	(B) Momentum	(C) Energy		(D) Charge
(4)	The em	f induced in 1.	mH inductor in which curre	ent changes from	5 <i>A</i> to 3 <i>A</i> in	1ms is:
	(A) 2	$\times 10^{-6} V$	(B) 2V	(C) $6 \times 10^{-6} V$		(D) 8V
(5)	Current	t leads the appl	ied voltage in pure	circuit.		, , ,
	(A) Res	sistive	(B) Capacitive	(C) Inductive		(D) Reactive
(6)	The SI	unit of Impeda	nce is:			(2) Reactive
	(A) He	nry	(B) Hertz	(C) Ohm		(D) Volt
(7)	Which	one of the follo	owing is the example of cry			(2) voit
	(A) Plas		(B) Glass	(C) Rubber		(D) Zirconia
(8)	Which o	component of t	he transistor has greater co		ourity?	(D) Zheoma
	(A) Bas		(B) Emitter	(C) Collector	ourry.	(D) Resistor
9)	In full w	vave rectification	on, the numbers of diodes r			(D) Resistor
	(A) 4		(B) 3	(C) 1		(D) 5
10)	Plank's	constant 'h' ha	as the same unit as that of:			(D) 3
		ular momentui		(C) Torque		(D) D
11)			ne dimension of:	(C) Torque		(D) Power
	(A) Mas		(B) Time	(C) Length		(D) Power
12)	The radi	us of 10 <sup>th</sup> orbit	of hydrogen atom in nm is	3:		, , <b>-</b>
	(A) 0.53		(B) 51.3	(C) 5.3		(D) 53
3)	The bind	ing energy per	nucleon is maximum for:	AND SHIP OF THE STATE OF THE ST		(2) 33
	(A) Iron	,	(B) Helium	(C) Radium		(D) Copper

Which of the following is highly penetrating? (14)

(A)  $\alpha$  – particles

(B)  $\gamma$  – rays

(C) X – rays

(D)  $\beta$  – particles

The force on electron in an electric field of magnitude  $10^4 NC^{-1}$  is: (15)

(A)  $1.9 \times 10^{-15} N$ 

(B)  $1.6 \times 10^{-15} N$ 

(C)  $1.6 \times 10^{-8} N$ 

(D)  $1.8 \times 10^{-15} N$ 

The total electric flux through any closed surface depends upon: (16)

(A) Charge

(B) Medium

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

Heat generated by a 50 watt bulb in one hour is: (17)

(A) 36000 J

(B) 48000 J

(C) 1800 J

(D) 180000 J