

BOARD OF INTERMEDIATE AND SECONDARY EDUCATION, MULTAN.
OBJECTIVE KEY FOR INTERMEDIATE 2nd ANNUAL EXAMINATION, 2025

Name of Subject: Physics Part II Group:

Q. Nos	Paper Code	Correct Answer	Paper Code	Correct Answer	Paper Code	Correct Answer	Paper Code	Correct Answer
	4471		4473		4475		4477	
1	B	40N	C	5.09PF	A	16 times	B	6.25×10^{18}
2	D	Electric Energy	D	Glass	D	Longer wave length	D	$1.2 \times 10^{12} \text{wb}$
3	A	600V	B	99	B	Distance	B	Decreased
4	C	Repel each other	C	Nano.Seconds	D	Greatest for medium nuclei	A	Current
5	B	6.25×10^{18}	A	16 times	C	1620 Years	C	5.09 PF
6	D	$1.2 \times 10^{12} \text{wb}$	D	Longer wave length	B	40N	D	Glass
7	B	Decreased	B	Distance	D	Electric energy	B	99
8	A	Current	D	Greatest for medium nuclei	A	600 V	C	Nano Second
9	C	5.09 PF	C	1620 Years	C	Repel each other	A	16 times
10	D	Glass	B	40N	B	6.25×10^{18}	D	Longer wave length
11	B	99	D	Electric energy	D	$1.2 \times 10^{12} \text{wb}$	B	Distance
12	C	Nano.Seconds	A	600V	B	Decreased	D	Greatest for medium nuclei
13	A	16 times	C	Repel each other	A	Current	C	1620 Years
14	D	Longer wave length	B	6.25×10^{18}	C	5.09 PF	B	40N
15	B	Distance	D	$1.2 \times 10^{12} \text{wb}$	D	Glass	D	Electric energy
16	D	Greatest for medium nuclei	B	Decreased	B	99	A	600V
17	C	1620 Year	A	Current	C	Nano Seconds	C	Repel each other
18								
19								
20								
Cross Check	A	B	C	D	A	B	C	D
Total	3	5	4	5	3	5	4	5

Key بنیائیت بابت صحیح سوالیہ پرچہ امارنگ

ہم نے مضمون فرکس پرچہ 2nd Annual گروپ 2025 کا انٹرمیڈیٹ دوسرا سالانہ امتحان کا سوالیہ پرچہ انتہائی و معروضی (Subjective & Objective) کو بنظر عین چیک کر لیا ہے یہ پرچہ Syllabus 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۔ نیز اس پرچہ کی معروضی (MCQs) Key کی بابت تصدیق کی جاتی ہے کہ 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۔ نیز سب ایگزامینرز کیلئے تفصیلی مارکنگ ہدایات / مارکنگ سکیم / Rubrics بھی تیار کر دی گئی ہیں۔

Prepared & Checked By:

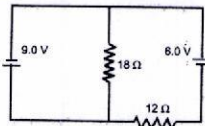
Dated: 11-11-25

S.#	Name	Designation	Institution	Mobile No	Signature
1	اقترار حسین بڑای	APD	گورنمنٹ ملٹ کالج ملتان	03226060851	
2	حافظ محمد علی	APD	گورنمنٹ کالج آف سائنس ملتان	03457275188	
3	ڈاکٹر خدیجہ الفوری	APD	گورنمنٹ کالج سول انجینئرنگ ملتان	03000799307	
4					
5					

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

1	Shahid Ashraf	Associate Prof.	Govt. Graduate College of Science, Multan	03077360030	
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تاریخ

INTERMEDIATE PART-II (12 th Class)		2025 (2 nd -A)	Roll No:
PHYSICS PAPER-II			
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)	How can you identify which plate of a capacitor is positively charged?		
(ii)	Electric lines of force never cross, why?		
(iii)	Define "Capacitive time constant".		
(iv)	Define an "Electron-volt".		
(v)	Why 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 it?		
(vii)	Write down two uses of C.R.O.		
(viii)	How can you convert a galvanometer into an ammeter?		
(ix)	What factors make fusion reaction difficult to achieve?		
(x)	What do you mean by "critical mass" in fission chain reaction?		
(xi)	What are the isotopes? What do they have in common and what do they have different?		
(xii)	Define the term "Nuclear mass defect" how it can be calculated?		
3. Attempt any eight parts.			8 × 2 = 16
(i)	Explain why the terminal potential difference of a battery decreases when the current drawn from it is increased?		
(ii)	State Kirchhoff's 1 st and 2 nd rules.		
(iii)	How a zero-ohm resistor is indicated by colour code?		
(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)	In R-C series circuit if $X_C = R$, then find the angle with which current leads the voltage.		
(vii)	What is meant by para and ferromagnetic substances? Give examples for each.		
(viii)	What is squid? For what purpose it is used?		
(ix)	Differentiate between ductile and brittle substances. Give one example for each.		
(x)	Why charge carriers are not present in the depletion region?		
(xi)	The inputs of a gate are 1 and 0. Identify the gate if its output is (a) 0, (b) 1.		
(xii)	Write down any two uses of Photodiode.		
4. Attempt any six parts.			6 × 2 = 12
(i)	How can induced current be increased?		
(ii)	Does the induced emf always act to decrease the magnetic flux through a circuit?		
(iii)	How would you position a flat loop of wire in a changing magnetic field so that there is no emf induced in the loop?		
(iv)	Write down applications of photocell.		
(v)	Is it possible for an object to move with speed of light? Explain.		
(vi)	Which photon, red, green or blue carries the most (a) energy and (b) momentum?		
(vii)	Can pair production take place in vacuum? Explain.		
(viii)	Can electron reside inside the nucleus? Explain.		
(ix)	Can X-rays be reflected, refracted, diffracted and polarized just like any other waves? Explain.		
SECTION-II			
NOTE: Attempt any three questions.			3 × 8 = 24
5.(a)	State Gauss's law. Apply it to determine electric field due to an infinite sheet of charge.		05
(b)	Find the current which flows in all the resistances of the circuit given blow:		03
			
6.(a)	Derive the expression for force on moving electric charge in a uniform magnetic field. Also determine its direction.		05
(b)	Two coil are placed side by side. An emf of 0.8 V is observed in one coil. When the current is charging at the rate of 200 A s ⁻¹ in the other coil. What is the mutual inductance of the coil?		03
7.(a)	What is an operational amplifier? Derive the relation of gain of the op-amp as non-inverting amplifier.		05
(b)	An inductor of inductance 150 μH is connected in parallel with a variable capacitor whose capacitance can be changed from 500 pF to 20 pF. Calculate the maximum frequency and minimum frequency for which the circuit can be tuned.		03
8.(a)	State and explain the Photoelectric effect. Write down its experimental results and failure of classical theory.		05
(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.		03
9.(a)	What is radioactivity? Explain the nuclear transmutation rules for emission of α, β & γ-rays.		05
(b)	Calculate the longest wavelength radiation of the Paschen series.		03

Paper Code		2025 (2 nd -A)			
Number: 4471		INTERMEDIATE PART-II (12 th Class)		Roll No: _____	
PHYSICS PAPER-II					
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 Force between two points charges in the presence of air is 80 N. when a dielectric "paraffined paper" of dielectric constant 2 is placed between them the force reduced to:	10 N	40 N	80 N	32 N
2	The electron volt is the unit of:	Electric Potential	Electric Current	Potential Difference	Electric Energy
3	The potential difference between the head and tail of an Electric EEL can be up to:	600 V	500 V	200 V	1000 V
4	Two long Parallel wires carrying current 'I ₁ ' and 'I ₂ ' in opposite direction:	Attract each other	Does not effect each other	Repel each other	Proportional to each other
5	The number of electrons in one Coulomb charge is equal to:	6.25×10^{19}	6.25×10^{18}	6.25×10^{-19}	6.25×10^{-18}
6	A current carrying coil having a 1000 turns of self inductance 2 H and Steady Current 6 A passing through in it. What will be the flux through each turn?	1.8×10^2 Wb	1.8×10^{-2} Wb	1.2×10^2 Wb	1.2×10^{-2} Wb
7	Due to Polarization, electric field 'E'	Increased	Decreased	First increase than decreased	Remains same
8	The slop of q – t curve at any instant of time when A.C Passes through a Capacitor represents:	Current	Voltage	Inductance	Capacitance
9	What is the Capacitance required to construct a Resonance circuit of frequency 1000 K Hz with an Inductor of 5 mH?	6.0 PF	7.5 PF	5.09 PF	8.09 PF
10	Which of the following is brittle Substance?	Lead	Copper	Wrought Iron	Glass
11	A transistor has a base current of 1 mA and emitter current 100 mA. The current gain of the transistor is:	1	99	100	101
12	A photodiode can turn its current ON and OFF in:	Milli Seconds	Micro Seconds	Nano Seconds	Mega Seconds
13	If temperature is doubled for a black body then energy radiated per second per unit area becomes:	16 times	4 times	$\frac{1}{16}$ times	$\frac{1}{4}$ times
14	At low temperature a body emits radiation of:	Shorter wavelength	High frequency and Shorter wavelength	High frequency	Longer wavelength
15	$\frac{h}{m_0c}$ has the unit of:	Time	Distance	Velocity	Acceleration
16	The binding energy per nucleon is maximum for:	Greatest for heavy nuclei	Least for heavy nuclei	Greatest for light nuclei	Greatest for medium weight nuclei
17	Half life of Radium-226 is:	2.5 days	3.8 days	1620 years	23.5 min

Paper Code		2025 (2 nd -A)			
Number: 4473		INTERMEDIATE PART-II (12 th Class)		Roll No: _____	
PHYSICS PAPER-II					
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	A transistor has a base current of 1 mA and emitter current 100 mA. The current gain of the transistor is:	1	99	100	101
4	A photodiode can turn its current ON and OFF in:	Milli Seconds	Micro Seconds	Nano Seconds	Mega Seconds
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16	Due to Polarization, electric field 'E'	Increased	Decreased	First increase than decreased	Remains same
17	The slop of $q - t$ curve at any instant of time when A.C Passes through a Capacitor represents:	Current	Voltage	Inductance	Capacitance

Paper Code		2025 (2 nd -A)			
Number: 4475		INTERMEDIATE PART-II (12 th Class)		Roll No: _____	
PHYSICS PAPER-II					
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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17	A photodiode can turn its current ON and OFF in:	Milli Seconds	Micro Seconds	Nano Seconds	Mega Seconds

Paper Code		2025 (2 nd -A)			
Number: 4477		INTERMEDIATE PART-II (12 th Class)		Roll No: _____	
PHYSICS PAPER-II					
TIME ALLOWED: 20 Minutes		OBJECTIVE		MAXIMUM MARKS: 17	
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