

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

Name of Subject: PHYSICS - 1st Year Group: 1st

Q. Nos	Paper Code	Correct Answer	Paper Code	Correct Answer	Paper Code	Correct Answer	Paper Code	Correct Answer
	2471		2473		2475		2477	
1	B	Joule	D	84 min	B	42	D	gt
2	C	chemical explosion	A	$\frac{1}{5} mv^2$	C	180°	C	$\sqrt{3}$
3	A	50 μm	C	2.4 Kms	A	Amplitude is small	A	90°
4	D	$\frac{1}{4}$	B	0 ms ⁻¹	B/A	speed of fluids	C	atto
5	B	42	D	gt	D	84 min	B	Least count
6	C	180°	C	$\sqrt{3}$	A	$\frac{1}{5} mv^2$	B	Joule
7	A	Amplitude is small	A	90°	C	2.4 Kms	C	chemical explosion
8	B/A	speed of fluids	C	atto	B	0 ms ⁻²	A	50 μm
9	D	84 min	B	Least count	D	gt	D	$\frac{1}{4}$
10	A	$\frac{1}{5} mv^2$	B	Joule	C	$\sqrt{3}$	B	42
11	C	2.4 Kms	C	chemical explosion	A	90°	C	180°
12	B	0 ms ⁻²	A	50 μm	C	atto	A	Amplitude is small
13	D	gt	D	$\frac{1}{4}$	B	Least count	B+A	speed of fluids + Pressure
14	C	$\sqrt{3}$	B	42	B	Joule	D	84 min
15	A	90°	C	180°	C	chemical explosion	A	$\frac{1}{5} mv^2$
16	C	atto	A	Amplitude is small	A	50 μm	C	2.4 Kms
17	B	Least count	B/A	speed of fluids	D	$\frac{1}{4}$	B	0 ms ⁻²
18								
19								
20								
Cross Check	A	B	C	D	A	B	C	D
Total	4	5	5	3	4	5	5	3

سرٹیفکیٹ مابین تصحیح سوالیہ پرچہ امارنگ

ہم نے مضمون فزکس پرچہ سریٹیفکیٹ مابین تصحیح سوالیہ پرچہ امارنگ کے تحت انٹرمیڈیٹ دوسرا سالانہ امتحان 2025 کا سوالیہ پرچہ انشائیہ 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: 20-11-2025

S.#	Name	Designation	Institution	Mobile No	Signature
1	Dr. M. Tufiq, Jamil	Asst. Prof.	GOVT. W.H.C. Multan	03009537155	
2	Mr. Asmat Zahid	Associate Prof.	Govt. Graduate College of Science, Multan	03006733033	
3	Mrs. Hafza Saima Sadaf	Asst. Prof.	GAC (W), Chungi No. 14 Multan	0306-7474184	
4					
5					

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

1	Dr. HAMMAD ABAS	Asst. Prof.	Emerson University, Multan	03047471109	
2	SAFI KHAN HUSAIN	Asst. Prof.	Millat College Multan	03376060911	

DATE: (11/11)

تاریخ

INTERMEDIATE PART-I (11 th Class)		2025 (2 nd -A)	Roll No: _____
PHYSICS PAPER-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)	What is the systematic error? How it can be minimized?		
(ii)	Differentiate between precision and accuracy.		
(iii)	Show that $E = mc^2$ is dimensionally consistent.		
(iv)	Why do we find it useful to have two units for the amount of substance, kilogram and mole?		
(v)	Define position vector and write equations for a three dimensional vector and its magnitude.		
(vi)	Name the three conditions that could make $\vec{A}_1 \times \vec{A}_2 = 0$		
(vii)	Two vectors have unequal magnitudes. Can their sum be zero?		
(viii)	Derive an equation which can determine the half of the time of projectile motion.		
(ix)	How would you elaborate Ballistic missiles as the application of projectile motion?		
(x)	Define impulse and show that how it is related to linear momentum.		
(xi)	Derive a relation for work-energy principle.		
(xii)	Calculate the work done in kilojoules in lifting a mass of 10kg through a vertical height of 10m.		
3. Attempt any eight parts.			8 × 2 = 16
(i)	Describe what should be the minimum velocity for a satellite to orbit close to the Earth around it.		
(ii)	State the direction of the following vectors in simple situations; angular momentum and angular velocity.		
(iii)	Show that $\vec{a} = \vec{\alpha} \times \vec{r}$		
(iv)	What is the Einstein's view of gravitation?		
(v)	What is drag force? What will be the effect of drag force acting upon a small sphere of radius r , moving down through a liquid?		
(vi)	In an orbiting space station, would the blood pressure in major arteries in the leg ever be greater than the blood pressure in major arteries in the neck.		
(vii)	Can we realize an ideal simple pendulum?		
(viii)	Under what conditions does the addition of two simple harmonic motions produce a resultant, which is also simple harmonic?		
(ix)	State Hooke's law. Write its mathematical form.		
(x)	A wave is produced along a stretched string but some of its particles permanently show zero displacement. What type of wave is it?		
(xi)	Explain why does sound travel faster in warm air than in cold air?		
(xii)	In case of Doppler's effect, define the blue shift and red shift		
4. Attempt any six parts.			6 × 2 = 12
(i)	Write two conditions in order to observe interference pattern.		
(ii)	How is the distance between interference fringes affected by the separation between the slits of Young's experiment? Can fringes disappear?		
(iii)	Could you obtain Newton's rings with transmitted light? If yes, would the pattern be different from that obtained with reflected light?		
(iv)	Find magnifying power of a convex lens with $f = 5cm$, when image is formed at least distance of distinct vision.		
(v)	Define total internal reflection and critical angle.		
(vi)	Why is the single mode fibre preferred in telecommunications?		
(vii)	If $P = \frac{1}{3} \rho \langle v^2 \rangle$, prove that $P \propto \langle K.E \rangle$, if molecular density is constant.		
(viii)	What happens to the temperature of the room, when an airconditioner is left running on a table in the middle of the room?		
(ix)	Does entropy of a system increase or decrease due to friction?		
SECTION-II			
NOTE: Attempt any three questions.			3 × 8 = 24
5.(a)	Explain the addition of n coplanar vectors by rectangular components method.		5
(b)	A truck weighing 2500kg and moving with a velocity of $21ms^{-1}$ collides with a stationary car weighing 1000kg. The truck and the car move together after the impact, calculate their common velocity.		3
6.(a)	Why geostationary orbits are important? Derive relation and find radius of the geostationary orbit.		5
(b)	A man pushes a lawn mower with a 40N force directed at an angle of 20° downward from the horizontal. Find the work done by the man as he cuts a strip of grass 20m long.		3
7.(a)	Define terminal velocity. Show that terminal velocity is directly proportional to the square of radius.		5
(b)	Calculate the entropy change when 1.0 kg ice at $0^\circ C$ melts into water at $0^\circ C$. Latent heat of fusion of ice $L_f = 3.36 \times 10^5 J kg^{-1}$		3
8.(a)	What is simple pendulum? Show that its time period does not depends upon the mass of bob.		5
(b)	Find the temperature at which the velocity of sound in air is two times its velocity at $10^\circ C$.		3
9.(a)	How diffraction of X - rays is studied by crystals and derive Bragg's equation.		5
(b)	A glass light pipe in air will totally internally reflect a light ray if its angle of incidence is at least 39° . What is the minimum angle for total internal reflection if pipe is in water? (Refractive index of water = 1.33)		3

Paper Code Number: 2473		2025 (2 nd -A) INTERMEDIATE PART-I (11 th Class)		Roll No:	
PHYSICS PAPER-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	Close orbiting satellite takes time to complete one revolution around the earth:	48 min	4.8 min	484 min	84 min
2	The rotational K.E of solid sphere is:	$\frac{1}{5}mv^2$	$\frac{2}{5}mv^2$	$\frac{1}{4}mv^2$	$\frac{3}{2}mv^2$
3	The escape velocity at the surface of moon is:	61kms ⁻¹	11.2kms ⁻¹	2.4kms ⁻¹	4.3kms ⁻¹
4	Horizontal acceleration of projectile is:	9.8ms ⁻²	0ms ⁻²	1.6ms ⁻²	32ms ⁻²
5	Velocity of an object dropped from a height at any time "t" is:	$\frac{1}{2}gt^2$	vit	at	gt
6	Magnitude of $\vec{A} = \hat{i} + \hat{j} + \hat{k}$ is:	$3\sqrt{2}$	$2\sqrt{3}$	$\sqrt{3}$	1
7	If $\vec{B} = 14\hat{j}$, then $\vec{B}$ makes angle with x – axis:	90°	60°	180°	45°
8	The ratio of micro to tera is:	exa	femto	atto	pico
9	Absolute uncertainty in a measuring instrument is equal to:	Accuracy	Least count	Fractional uncertainty	Percentage uncertainty
10	The product of SI units of pressure and volume is:	Watt	Joule	Pascal	Kg
11	The example of irreversible process is:	Slow compression	Liquification	Chemical explosion	Evaporation
12	In multimode step index fibre, the diameter of core is _____.	50μm	5μm	100μm	150μm
13	In Michelson's interferometer, to switch bright fringe to dark fringe, movable mirror should be displaced:	$\frac{\lambda}{3}$	$\frac{\lambda}{2}$	λ	$\frac{\lambda}{4}$
14	Wavelength of a wave for pipe closed at one end in fundamental mode is:	2ℓ	4ℓ	$\frac{\ell}{2}$	ℓ
15	When transverse wave travelling in rare medium is incident on denser medium, then after reflection phase changes by:	360°	90°	180°	30°
16	The motion of simple pendulum is S.H.M only if:	Amplitude is small	Amplitude is large	Length is small	Mass is small
17	Venturi-meter is a device used to measure:	Pressure of fluids	Speed of fluids	Density of fluids	Viscosity of fluids

17(Obj)(★★)-2025(2nd-A)-

(MULTAN)

Paper Code Number: 2471		2025 (2 nd -A) INTERMEDIATE PART-I (11 th Class)		Roll No: .	
PHYSICS PAPER-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 product of SI units of pressure and volume is:	Watt	Joule	Pascal	Kg
2	The example of irreversible process is:	Slow compression	Liquification	Chemical explosion	Evaporation
3	In multimode step index fibre, the diameter of core is _____.	50 μm	5 μm	100 μm	150 μm
4	In Michelson's interferometer, to switch bright fringe to dark fringe, movable mirror should be displaced:	$\frac{\lambda}{3}$	$\frac{\lambda}{2}$	λ	$\frac{\lambda}{4}$
5	Wavelength of a wave for pipe closed at one end in fundamental mode is:	2 ℓ	4 ℓ	$\frac{\ell}{2}$	ℓ
6	When transverse wave travelling in rare medium is incident on denser medium, then after reflection phase changes by:	360°	90°	180°	30°
7	The motion of simple pendulum is S.H.M only if:	Amplitude is small	Amplitude is large	Length is small	Mass is small
8	Venturi-meter is a device used to measure:	Pressure of fluids	Speed of fluids	Density of fluids	Viscosity of fluids
9	Close orbiting satellite takes time to complete one revolution around the earth:	48 min	4.8 min	484 min	84 min
10	The rotational K.E of solid sphere is:	$\frac{1}{5}mv^2$	$\frac{2}{5}mv^2$	$\frac{1}{4}mv^2$	$\frac{3}{2}mv^2$
11	The escape velocity at the surface of moon is:	61 kms^{-1}	11.2 kms^{-1}	2.4 kms^{-1}	4.3 kms^{-1}
12	Horizontal acceleration of projectile is:	9.8 ms^{-2}	0 ms^{-2}	1.6 ms^{-2}	32 ms^{-2}
13	Velocity of an object dropped from a height at any time "t" is:	$\frac{1}{2}gt^2$	vt	at	gt
14	Magnitude of $\vec{A} = \hat{i} + \hat{j} + \hat{k}$ is:	3 $\sqrt{2}$	2 $\sqrt{3}$	$\sqrt{3}$	1
15	If $\vec{B} = 14\hat{j}$, then $\vec{B}$ makes angle with x - axis:	90°	60°	180°	45°
16	The ratio of micro to tera is:	exa	femto	atto	pico
17	Absolute uncertainty in a measuring instrument is equal to:	Accuracy	Least count	Fractional uncertainty	Percentage uncertainty

Paper Code Number: 2475		2025 (2 nd -A) INTERMEDIATE PART-I (11 th Class)		Roll No:	
PHYSICS PAPER-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	Wavelength of a wave for pipe closed at one end in fundamental mode is:	2ℓ	4ℓ	$\frac{\ell}{2}$	ℓ
2	When transverse wave travelling in rare medium is incident on denser medium, then after reflection phase changes by:	360°	90°	180°	30°
3	The motion of simple pendulum is S.H.M only if:	Amplitude is small	Amplitude is large	Length is small	Mass is small
4	Venturi-meter is a device used to measure:	Pressure of fluids	Speed of fluids	Density of fluids	Viscosity of fluids
5	Close orbiting satellite takes time to complete one revolution around the earth:	48 min	4.8 min	484 min	84 min
6	The rotational K.E of solid sphere is:	$\frac{1}{5}mv^2$	$\frac{2}{5}mv^2$	$\frac{1}{4}mv^2$	$\frac{3}{2}mv^2$
7	The escape velocity at the surface of moon is:	61 kms^{-1}	11.2 kms^{-1}	2.4 kms^{-1}	4.3 kms^{-1}
8	Horizontal acceleration of projectile is:	9.8 ms^{-2}	0 ms^{-2}	1.6 ms^{-2}	32 ms^{-2}
9	Velocity of an object dropped from a height at any time "t" is:	$\frac{1}{2}gt^2$	vit	at	gt
10	Magnitude of $\vec{A} = \hat{i} + \hat{j} + \hat{k}$ is:	$3\sqrt{2}$	$2\sqrt{3}$	$\sqrt{3}$	1
11	If $\vec{B} = 14\hat{j}$, then $\vec{B}$ makes angle with x - axis:	90°	60°	180°	45°
12	The ratio of micro to tera is:	exa	femto	atto	pico
13	Absolute uncertainty in a measuring instrument is equal to:	Accuracy	Least count	Fractional uncertainty	Percentage uncertainty
14	The product of SI units of pressure and volume is:	Watt	Joule	Pascal	Kg
15	The example of irreversible process is:	Slow compression	Liquification	Chemical explosion	Evaporation
16	In multimode step index fibre, the diameter of core is _____.	$50\mu\text{m}$	$5\mu\text{m}$	$100\mu\text{m}$	$150\mu\text{m}$
17	In Michelson's interferometer, to switch bright fringe to dark fringe, movable mirror should be displaced:	$\frac{\lambda}{3}$	$\frac{\lambda}{2}$	λ	$\frac{\lambda}{4}$

Paper Code Number: 2477		2025 (2 nd -A) INTERMEDIATE PART-I (11 th Class)		Roll No:	
PHYSICS PAPER-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	Velocity of an object dropped from a height at any time "t" is:	$\frac{1}{2}gt^2$	vit	at	gt
2	Magnitude of $\vec{A} = \hat{i} + \hat{j} + \hat{k}$ is:	$3\sqrt{2}$	$2\sqrt{3}$	$\sqrt{3}$	1
3	If $\vec{B} = 14\hat{j}$, then $\vec{B}$ makes angle with x - axis:	90°	60°	180°	45°
4	The ratio of micro to tera is:	exa	femto	atto	pico
5	Absolute uncertainty in a measuring instrument is equal to:	Accuracy	Least count	Fractional uncertainty	Percentage uncertainty
6	The product of SI units of pressure and volume is:	Watt	Joule	Pascal	Kg
7	The example of irreversible process is:	Slow compression	Liquification	Chemical explosion	Evaporation
8	In multimode step index fibre, the diameter of core is _____.	50 μm	5 μm	100 μm	150 μm
9	In Michelson's interferometer, to switch bright fringe to dark fringe, movable mirror should be displaced:	$\frac{\lambda}{3}$	$\frac{\lambda}{2}$	λ	$\frac{\lambda}{4}$
10	Wavelength of a wave for pipe closed at one end in fundamental mode is:	2 ℓ	4 ℓ	$\frac{\ell}{2}$	ℓ
11	When transverse wave travelling in rare medium is incident on denser medium, then after reflection phase changes by:	360°	90°	180°	30°
12	The motion of simple pendulum is S.H.M only if:	Amplitude is small	Amplitude is large	Length is small	Mass is small
13	Venturi-meter is a device used to measure:	Pressure of fluids	Speed of fluids	Density of fluids	Viscosity of fluids
14	Close orbiting satellite takes time to complete one revolution around the earth:	48 min	4.8 min	484 min	84 min
15	The rotational K.E of solid sphere is:	$\frac{1}{5}mv^2$	$\frac{2}{5}mv^2$	$\frac{1}{4}mv^2$	$\frac{3}{2}mv^2$
16	The escape velocity at the surface of moon is:	61 kms^{-1}	11.2 kms^{-1}	2.4 kms^{-1}	4.3 kms^{-1}
17	Horizontal acceleration of projectile is:	9.8 ms^{-2}	0 ms^{-2}	1.6 ms^{-2}	32 ms^{-2}