

BOARD OF INTERMEDIATE AND SECONDARY EDUCATION, MULTAN.
OBJECTIVE KEY FOR INTERMEDIATE 2nd ANNUAL EXAMINATION, 2024

Name of Subject:

PHYSICS PAPER-1

Group:.....

Q. Nos	Paper Code	Correct Answer	Paper Code	Correct Answer	Paper Code	Correct Answer	Paper Code	Correct Answer
	2471		2473		2475		2477	
1	C	Distance	D	200 Nm ⁻¹	A	Oil	C	Linear Momentum
2	B	4%	B	2m	B	24	D	19.6m
3	D	60°	D	Zero	D	$\frac{2}{5}mv^2$	A	Oil
4	A	10N	B	$10^{-10}m$	A	Pressure	B	24
5	C	Linear Momentum	D	50 μm	D	200 Nm ⁻¹	D	$\frac{2}{5}mv^2$
6	D	19.6m	B	8.34 Jm ⁻¹	B	2m	A	Pressure
7	A	Oil	C	Remain Constant	D	Zero	D	200 Nm ⁻¹
8	B	24	C	Distance	B	$10^{-10}m$	B	2m
9	D	$\frac{2}{5}mv^2$	B	4%	D	50 μm	D	Zero
10	A	Pressure	D	60°	B	8.34 Jm ⁻¹	B	$10^{-10}m$
11	D	200 Nm ⁻¹	A	10N	C	Remain Constant	D	50 μm
12	B	2m	C	Linear momentum	C	Distance	B	8.34 Jm ⁻¹
13	D	Zero	D	19.6m	B	4%	C	Remain constant
14	B	$10^{-10}m$	A	Oil	D	60°	C	Distance
15	D	50 μm	B	24	A	10N	B	4%
16	B	8.34 Jm ⁻¹	D	$\frac{2}{5}mv^2$	C	Linear Momentum	D	60°
17	C	Remain Constant	A	Pressure	D	19.6m	A	10N
18								
19								
20								
Cross Check	A B C D		A B C D		A B C D		A B C D	
Total	3536		3536		3536		3536	

سرٹیفکیٹ بابت صحیح سوالیہ پرچہ امارنگ Key

ہم نے مضمون **فزکس** پرچہ **سلا 254** گروپ **2024** کا انٹرمیڈیٹ دوسرا حتمی امتحان 2024 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: 11/11/24.

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

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12-11-24

Paper Code Number: 2471		2024 (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	Light year is the unit of:	Time	Velocity	Distance	Acceleration
2	If error in measurement of radius of circle is 2%, then permissible error in its area will be:	3%	4%	5%	6%
3	If the magnitude of $\vec{A}$, $\vec{B} = \frac{1}{2}AB$ then an angle between $\vec{A}$ and $\vec{B}$ is:	30°	45°	55°	60°
4	A force of 10N makes an angle 90° with x – axis, then its y – component is:	10N	30N	60N	75N
5	Impulse has same unit as that of:	Newton	Energy	Linear momentum	Mass
6	The distance covered by free falling body in two second is:	7.9 m	8.19m	10m	19.6m
7	Which one is non-renewable source of energy?	Oil	Tides	Biomass	Wave
8	The number of satellites in global positioning system is:	13	24	30	36
9	Moment of inertia of solid sphere is:	$\frac{1}{2}mr^2$	$\frac{3}{2}mr^2$	mr^2	$\frac{2}{5}mr^2$
10	The dimension of ρgh is similar as that of:	Pressure	Power	Torque	Force
11	10cm extension is produced in a string due to a force of 20N. The spring constant is:	2Nm ⁻¹	10Nm ⁻¹	20Nm ⁻¹	200Nm ⁻¹
12	If a stretched string is 4m and it has 4 loops of stationary waves, then wavelength is:	1m	2m	3m	4m
13	The velocity of sound in vacuum is:	275 m/s	200 m/s	100 m/s	Zero
14	What is order of wavelength of x – rays?	10 ⁻⁵ m	10 ⁻¹⁰ m	10 ⁻¹⁵ m	10 ⁻²⁰ m
15	In multimode step index fibre the diameter of the core is:	20μm	25μm	30μm	50μm
16	Which is the value of universal gas constant?	83.14Jmol ⁻¹ k ⁻¹	8.314Jmol ⁻¹ k ⁻¹	831.4Jmol ⁻¹ k ⁻¹	8314Jmol ⁻¹ k ⁻¹
17	In reversible process the entropy of system:	Increases	Decreases	Remain constant	Becomes zero

Paper Code Number: 2473		2024 (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	10cm extension is produced in a string due to a force of 20N. The spring constant is:	$2Nm^{-1}$	$10Nm^{-1}$	$20Nm^{-1}$	$200Nm^{-1}$
2	If a stretched string is 4m and it has 4 loops of stationary waves, then wavelength is:	1m	2m	3m	4m
3	The velocity of sound in vacuum is:	$275m/s$	$200m/s$	$100m/s$	Zero
4	What is order of wavelength of x – rays?	$10^{-5}m$	$10^{-10}m$	$10^{-15}m$	$10^{-20}m$
5	In multimode step index fibre the diameter of the core is:	$20\mu m$	$25\mu m$	$30\mu m$	$50\mu m$
6	Which is the value of universal gas constant?	$83.14Jmol^{-1}K^{-1}$	$8.314Jmol^{-1}K^{-1}$	$831.4Jmol^{-1}K^{-1}$	$8314Jmol^{-1}K^{-1}$
7	In reversible process the entropy of system:	Increases	Decreases	Remain constant	Becomes zero
8	Light year is the unit of:	Time	Velocity	Distance	Acceleration
9	If error in measurement of radius of circle is 2%, then permissible error in its area will be:	3%	4%	5%	6%
10	If the magnitude of $\vec{A}$, $\vec{B} = \frac{1}{2}AB$ then an angle between $\vec{A}$ and $\vec{B}$ is:	30°	45°	55°	60°
11	A force of 10N makes an angle 90° with x – axis, then its y – component is:	10N	30N	60N	75N
12	Impulse has same unit as that of:	Newton	Energy	Linear momentum	Mass
13	The distance covered by free falling body in two second is:	7.9 m	8.19m	10m	19.6m
14	Which one is non-renewable source of energy?	Oil	Tides	Biomass	Wave
15	The number of satellites in global positioning system is:	13	24	30	36
16	Moment of inertia of solid sphere is:	$\frac{1}{2}mr^2$	$\frac{3}{2}mr^2$	mr^2	$\frac{2}{5}mr^2$
17	The dimension of ρgh is similar as that of:	Pressure	Power	Torque	Force

Paper Code Number: 2475		2024 (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	Which one is non-renewable source of energy?	Oil	Tides	Biomass	Wave
2	The number of satellites in global positioning system is:	13	24	30	36
3	Moment of inertia of solid sphere is:	$\frac{1}{2}mr^2$	$\frac{3}{2}mr^2$	mr^2	$\frac{2}{5}mr^2$
4	The dimension of ρgh is similar as that of:	Pressure	Power	Torque	Force
5	10cm extension is produced in a string due to a force of 20N. The spring constant is:	$2Nm^{-1}$	$10Nm^{-1}$	$20Nm^{-1}$	$200Nm^{-1}$
6	If a stretched string is 4m and it has 4 loops of stationary waves, then wavelength is:	1m	2m	3m	4m
7	The velocity of sound in vacuum is:	$275m/s$	$200m/s$	$100m/s$	Zero
8	What is order of wavelength of x-rays?	$10^{-5}m$	$10^{-10}m$	$10^{-15}m$	$10^{-20}m$
9	In multimode step index fibre the diameter of the core is:	$20\mu m$	$25\mu m$	$30\mu m$	$50\mu m$
10	Which is the value of universal gas constant?	$83.14Jmol^{-1}K^{-1}$	$8.314Jmol^{-1}K^{-1}$	$831.4Jmol^{-1}K^{-1}$	$8314Jmol^{-1}K^{-1}$
11	In reversible process the entropy of system:	Increases	Decreases	Remain constant	Becomes zero
12	Light year is the unit of:	Time	Velocity	Distance	Acceleration
13	If error in measurement of radius of circle is 2%, then permissible error in its area will be:	3%	4%	5%	6%
14	If the magnitude of $\vec{A}, \vec{B} = \frac{1}{2}AB$ then an angle between $\vec{A}$ and $\vec{B}$ is:	30°	45°	55°	60°
15	A force of 10N makes an angle 90° with x-axis, then its y-component is:	10N	30N	60N	75N
16	Impulse has same unit as that of:	Newton	Energy	Linear momentum	Mass
17	The distance covered by free falling body in two second is:	7.9 m	8.19m	10m	19.6m

Paper Code Number: 2477		2024 (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	Impulse has same unit as that of:	Newton	Energy	Linear momentum	Mass
2	The distance covered by free falling body in two second is:	7.9 m	8.19m	10m	19.6m
3	Which one is non-renewable source of energy?	Oil	Tides	Biomass	Wave
4	The number of satellites in global positioning system is:	13	24	30	36
5	Moment of inertia of solid sphere is:	$\frac{1}{2}mr^2$	$\frac{3}{2}mr^2$	mr^2	$\frac{2}{5}mr^2$
6	The dimension of ρgh is similar as that of:	Pressure	Power	Torque	Force
7	10cm extension is produced in a string due to a force of 20N. The spring constant is:	$2Nm^{-1}$	$10Nm^{-1}$	$20Nm^{-1}$	$200Nm^{-1}$
8	If a stretched string is 4m and it has 4 loops of stationary waves, then wavelength is:	1m	2m	3m	4m
9	The velocity of sound in vacuum is:	$275m/s$	$200m/s$	$100m/s$	Zero
10	What is order of wavelength of x-rays?	$10^{-5}m$	$10^{-10}m$	$10^{-15}m$	$10^{-20}m$
11	In multimode step index fibre the diameter of the core is:	$20\mu m$	$25\mu m$	$30\mu m$	$50\mu m$
12	Which is the value of universal gas constant?	$83.14Jmol^{-1}K^{-1}$	$8.314Jmol^{-1}K^{-1}$	$831.4Jmol^{-1}K^{-1}$	$8314Jmol^{-1}K^{-1}$
13	In reversible process the entropy of system:	Increases	Decreases	Remain constant	Becomes zero
14	Light year is the unit of:	Time	Velocity	Distance	Acceleration
15	If error in measurement of radius of circle is 2%, then permissible error in its area will be:	3%	4%	5%	6%
16	If the magnitude of $\vec{A}$, $\vec{B} = \frac{1}{2}AB$ then an angle between $\vec{A}$ and $\vec{B}$ is:	30°	45°	55°	60°
17	A force of 10N makes an angle 90° with x-axis, then its y-component is:	10N	30N	60N	75N

INTERMEDIATE PART-I (11 th Class)		2024 (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)	Why do we find it useful to have two units for the amount of a substance, the kilogram and the mole?		
(ii)	Show that $V = \sqrt{\frac{F \times \ell}{m}}$, obey the principle of homogeneity.		
(iii)	Find the uncertainty in the diameter of a wire in mm measured by a screw gauge in the following measurements 1.20, 1.22, 1.23, 1.19		
(iv)	With the help of example describe the difference between "Precision" and "Accuracy" in a measurement.		
(v)	Is it possible to add a vector quantity to a scalar quantity? Explain.		
(vi)	If $\sum \vec{F} = 0$ and $\sum \vec{\tau} = 0$ what type of equilibrium exist in a body?		
(vii)	If all the components of the vectors, $\vec{A}_1$ and $\vec{A}_2$ were reversed, how would this alter $\vec{A}_1 \times \vec{A}_2$?		
(viii)	Motion with constant velocity is a special case of motion with constant acceleration. Is this statement true? Discuss.		
(ix)	Water is projected from two rubber pipes at the same speed-from, one at an angle of 30° and from the other at 60°. Their ranges are equal. Why?		
(x)	Explain the circumstances in which of a moving car has (a) $\vec{v}$ is zero but $\vec{a}$ is not zero (b) $\vec{a}$ is zero but $\vec{v}$ is not zero		
(xi)	Calculate the work done in kilo joules in lifting a mass of 10kg (at a steady velocity) through a vertical height of 10m.		
(xii)	Prove that, $P = \vec{F} \cdot \vec{v}$		
3. Attempt any eight parts.			8 × 2 = 16
(i)	What is meant by moment of inertia? Explain its significance.		
(ii)	State the direction of the given vectors in simple situations, angular momentum and angular velocity.		
(iii)	When mud flies off the tyre of a moving bicycle, in what direction does it fly?		
(iv)	Why the Einstein's views of gravitation are better than Newton's views of gravitation? Give any two reasons.		
(v)	Why fog droplets appear to be suspended in air?		
(vi)	Explain the working of a carburetor of a motor car using Bernoulli's principle.		
(vii)	Does the acceleration of a simple harmonic oscillator remain constant during its motion? Explain.		
(viii)	Under what conditions does the addition of two simple harmonic motions produce a resultant, which is also simple harmonic?		
(ix)	A body describing simple harmonic motion has a maximum speed of 2ms^{-1} and a maximum acceleration of 20ms^{-2} . Find the period of a body.		
(x)	What features do longitudinal waves have in common with transverse wave?		
(xi)	How should a sound source move with respect to an observer so that the frequency of its sound does not change?		
(xii)	What is the frequency of wave in a 10cm string if its tension is 2N and mass per unit length is 2Kg m^{-1} ?		
4. Attempt any six parts.			6 × 2 = 12
(i)	How does the structure of biologically important molecules are determined using X-rays?		
(ii)	How does the slit separation of a diffraction grating is change by increasing number of lines mark on it.		
(iii)	How would you distinguish between un-polarized and plane-polarized lights?		
(iv)	What is function of collimator in spectrometer?		
(v)	What is normal adjustment of an astronomical telescope?		
(vi)	How the resolving power of a grating can be increased?		
(vii)	A thermos flask containing milk as a system is shaken rapidly. What happened to temperature of milk?		
(viii)	Why is the average velocity of molecules in a gas zero but average values of squared velocities is not zero?		
(ix)	How does the internal energy change in an isothermal process?		
SECTION-II			
NOTE: Attempt any three questions.			3 × 8 = 24
5.(a)	How would you provide a narrative account of three distinct velocity-time graphs, accompanied by a concluding statement?		5
(b)	A uniform sphere of weight of 10.0N is held by a string attached to a frictionless wall so that the string makes an angle of 30° with the wall as shown in the figure. Find the tension in the string.		3
			
6.(a)	Discuss interconversion of potential energy and kinetic energy.		5
(b)	A stationary wave is established in a string which is 120cm long and fixed at both ends. The string vibrates in four segments, at a frequency of 120Hz. Determine its wavelength and the fundamental frequency.		3
7.(a)	What is artificial gravity and prove the relation $f = \frac{1}{2\pi} \sqrt{\frac{g}{R}}$		5
(b)	A block of mass 4.0 kg is dropped from a height of 0.80m on to a spring of spring constant $K = 1960\text{Nm}^{-1}$. Find the maximum distance through which the spring will be compressed.		3
8.(a)	What is terminal velocity? Prove that terminal velocity of a droplet is directly proportional to the square of the radius of the droplet.		5
(b)	Estimate the average speed of nitrogen molecules in air under standard conditions of pressure and temperature.		3
9.(a)	What are X-rays? Explain X-rays diffraction by crystals.		5
(b)	A simple astronomical telescope in normal adjustment has an objective of focal length 100cm and an eye piece of focal length 5.0 cm. What is the angular magnification		3