

Name of Subject:

Physics - Part - I

Q. Nos	Paper Code 2471	Correct Answer	Paper Code 2473	Correct Answer	Paper Code 2475	Correct Answer	Paper Code 2477	Correct Answer
1	C	[L]	C	Force	A	Power	A	Pressure
2	C	Systematic error	B	3	B	decreases	C	99.2 cm
3	B	Average accel.	C	3 rd	A	Increases	B	Longitudinal waves
4	C	Force	A	Power	A	Pressure	C	Steel
5	B	3	B	decreases	C	99.2 cm	D	Dark
6	C	3 rd	A	Increases	B	Longitudinal waves	D	100 Km
7	A	Power	A	Pressure	C	Steel	B	decreases
8	B	decreases	C	99.2 cm	D	dark	C	273.16 K
9	A	Increases	B	Longitudinal waves	D	100 Km	C	[L]
10	A	Pressure	C	Steel	B	decreases	C	Systematic error
11	C	99.2 cm	D	dark	C	273.16 K	B	Average Accel.
12	B	Longitudinal waves	D	100 Km	C	[L]	C	Force
13	C	Steel	B	decreases	C	Systematic error	B	3
14	D	Dark	C	273.16 K	B	average accel.	C	3 rd
15	D	100 km	C	[L]	C	Force	A	Power
16	B	Decreases	C	Systematic error	B	3	B	decreases
17	C	273.16 K	B	average acceleration	C	3 rd	A	Increases
18	/	/	/	/	/	/	/	/
19	/	/	/	/	/	/	/	/
20	/	/	/	/	/	/	/	/

سرٹیفکیٹ بابت صحیح سوالیہ پرچہ / مارکنگ Key

ہم نے مضمون **فزکس** پرچہ - **1** - گروپ **1** - انٹر میڈیٹ 2022ء 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: 20-12-2022

S.#	Name	Designation	Institution	Mobile No	Signature
1	Kaleem Ullah	Associate Professor	Govt. Graduate College of Science Multan	0301-7400172	
2	Shahid Asghar	Associate Prof.	Govt. Graduate College of Science Multan	03077360030	
3	MAHMOOD AHMAD	LECT.	Govt. Graduate College of Science Multan	03017486421	
4	SAFI KHAN	A/Prof.	Govt. Millat College, Multan	03226060851	
5		Re-checker			

1- Muhammad SARFRAZ
Associate Professor of Physics
21/12/2022
0302-7777121

2- Bashir Ahmad
Associate Professor of Physics
12-12-2022
Govt. Millat College Multan
0302-205057

ثانوی و اعلیٰ ثانوی تعلیمی بورڈ، ملتان

مورخہ: 20.12.22 مضمون: Physics پرچہ: I گروپ: X

جزل ہدایات برائے مارکنگ ہدایات (مارکنگ سکیم)

Page - I

انٹرمیڈیٹ سالانہ امتحان 2022

Sr #	Code	Error Indicated	Sr #	Code	Error Indicated
1.	UN	Un-Necessary	8.	SP	Spelling Error
2.	Ir	Irrelevant	9.	P.	Punctuation
3.	IN	Incomplete	10.	Wo	Wrong word error
4.	EX	Extra	11.	Wt	Wrong Tense
5.	Rp	Re-Produced	12.	Wf	Wrong Form
6.	I	Insufficient	13.	OA	Over Attempt
7.	Gr	Grammar Error			

اہم نوٹ: ہر سوال "Full Award" سے کم نمبر لگانے کی صورت میں وجہ ضرور لکھیں۔

Section - I

Q2 Attempt any eight Parts:-

2 x 8 = 16

- As per. Question — 2 Mark
- Definition + Relation with linear Momentum (1+1) Mark
- Dimension of pressure + Dimension of Density (1+1) Mark.

$$\downarrow \quad \quad \quad \downarrow$$

$$[ML^{-1}T^{-2}] \quad + \quad [ML^{-3}]$$
- Minimum speed of projectile + Max. speed of proj. (1+1) Mark
- Explanation with Reason — 02 Mark
- Explanation with Reason — 02 Mark
- Dimensionally correct proof — 02 Mark
- As per Question — 02 Mark
- Definition + Formula — (01 + 01) Mark.
- Definition + one example — (01 + 01) Mark.
- Statement of 1st law of Thermodynamics 2 Mark.
- Definition + unit — (01 + 01) Mark.

Q3 Attempt any Eight Parts:-

- No + Explanation (1+1) Mark.

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.

Q.No.1

- (1) The dimensions of "light year" are:
 (A) $[M^0LT^{-1}]$ (B) $[ML^2T^{-2}]$ (C) $[L]$ (D) $[M^0L^0T]$
- (2) Zero error is the example of:
 (A) Personal error (B) Random error (C) Systematic error (D) None of these
- (3) If slope of velocity time graph is not constant at different points then body is moving with:
 (A) Uniform velocity (B) Average acceleration
 (C) Increasing acceleration (D) Constant acceleration
- (4) The product of mass flow per second with velocity is:
 (A) Momentum (B) Acceleration (C) Force (D) Displacement
- (5) Minimum number of unequal forces whose vector sum can be zero is:
 (A) 2 (B) 3 (C) 4 (D) 5
- (6) In which quadrant, vector $-3\hat{i} - 5\hat{j}$ lies:
 (A) 1st (B) 2nd (C) 3rd (D) 4th
- (7) The rate at which work is being done is called:
 (A) Power (B) Energy (C) Force (D) Density
- (8) As we go below the surface of earth, the value of 'g':
 (A) Increases (B) Decreases (C) Remains constant (D) None of these
- (9) The apparent weight of a man in ascending lift moving with acceleration 'a':
 (A) Increases (B) Decreases (C) Becomes zero (D) Remains constant
- (10) The dimensions of potential energy per unit volume are same as that of:
 (A) Pressure (B) Work (C) Density (D) Power
- (11) The length of second pendulum is:
 (A) 9.92 cm (B) 9.92 m (C) 99.2 cm (D) 99.2 m
- (12) Waves produced in organ pipes are:
 (A) Transverse waves (B) Longitudinal waves (C) Electromagnetic waves (D) Microwaves
- (13) In which of the following, speed of sound wave is greatest?
 (A) Water (B) Air (C) Steel (D) Vacuum
- (14) When Newton's rings are observed with reflected light, the control spot is:
 (A) Blue (B) Red (C) Bright (D) Dark
- (15) Repeaters are placed in the new fibre optic system at a distance of:
 (A) 30 km (B) 50 km (C) 80 km (D) 100 km
- (16) If pressure is increased, melting point of ice:
 (A) Increases (B) Decreases (C) Remains constant (D) None of these
- (17) Triple point of water is:
 (A) $273.16^\circ C$ (B) $273.16^\circ F$ (C) $273.16 K$ (D) $373.16 K$

PHYSICS PAPER-I

TIME ALLOWED: 20 Minutes

MAXIMUM MARKS: 17

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PHYSICS PAPER-I

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INTERMEDIATE PART-I (11th CLASS)**PHYSICS PAPER-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. Write short answers to any eight parts.****8 × 2 = 16**

- (i) Does a dimensional analysis give any information of constant of proportionality that may appear in algebraic expression?
- (ii) Define impulse and show how it is related to linear momentum?
- (iii) Give the dimension of (i) Pressure (ii) Density
- (iv) At what point or points in its path does a projectile have its minimum speed, its maximum speed?
- (v) Specific heat of a gas at constant pressure is greater than specific heat at constant volume. Why?
- (vi) Why is the average velocity of the molecules in a gas zero but the average of the square of velocities is not zero?
- (vii) Show that equation $F = ma$ is dimensionally correct.
- (viii) What is meant by Scientific Notation?
- (ix) Define Linear momentum write its formula.
- (x) Define Isolated System. Give example.
- (xi) What is first Law of Thermodynamics?
- (xii) Define Entropy. Give its unit.

3. Write short answers to any eight parts.**8 × 2 = 16**

- (i) Can a body rotate about its centre of gravity under the action of its weight?
- (ii) Can a vector have a component greater than the vector's magnitude?
- (iii) What is the unit vector in the direction of the vector $A = 4\hat{i} + 3\hat{j}$?
- (iv) How the energy is obtained from tides?
- (v) In which case is more work done? When a 50 kg bag of books is lifted through 50cm, or when a 50kg crate is pushed through 2m across the floor with a force of 50N?
- (vi) A 50kg man runs up a long stairs in 10 sec. Height of the stairs is 10m. Calculate his power output in watts.
- (vii) Define Real and Apparent Weight.
- (viii) Why does a diver change his body positions before and after diving in the pool?
- (ix) Explain why an object, orbiting the Earth, is said to be freely falling. Use your explanation to point out why objects appear weightless under certain circumstances.
- (x) What is fringe spacing? On what factors it does depend?
- (xi) An oil film spreading over a wet foot path shows colours. How does it happen? Explain?
- (xii) Why the centre of Newton's ring's is dark for reflected light?

4. Write short answers to any six parts.**6 × 2 = 12**

- (i) Explain, how the swing is produced in a fast moving cricket ball?
- (ii) Define simple harmonic motion and derive relation for it.
- (iii) What are the requirements for a system to get oscillations?
- (iv) Can we realize an ideal simple pendulum?
- (v) What is the effect of pressure and temperature on the speed of sound?

P.T.O.

- (vi) Why does sound travel faster in solids than in gases?
- (vii) How should a sound source move with respect to an observer so that the frequency of its sound does not change?
- (viii) Define total internal reflection and draw ray diagram.
- (ix) Why would it be advantageous to use blue light with a compound microscope?

SECTION-II

NOTE: Attempt any three questions.

3 × 8 = 24

- | | | |
|-------|--|---|
| 5.(a) | Describe the method of addition of two vector's by rectangular components. | 5 |
| (b) | A brick of mass 2.0 kg is dropped from a rest position 5.0m above the ground. What is its velocity at a height of 3.0m above the ground? | 3 |
| | | |
| 6.(a) | Define Projectile Motion. Derive relations for height of projectile and time of flight. | 5 |
| (b) | What is the least speed at which an aeroplane can execute a vertical loop of 1.0 km radius so that there will be no tendency for the pilot to fall down at the highest point? | 3 |
| | | |
| 7.(a) | What is Doppler's Effect? Discuss its cases when | |
| | (i) Listener is moving towards a stationary source of sound | |
| | (ii) Source of sound moving towards stationary listener | 5 |
| (b) | How large must a heating duct be if air is moving 3.0ms^{-1} along it can replenish the air in a room of 300m^3 volume every 15 min? | 3 |
| | | |
| 8.(a) | Derive the relation for the time period of a simple pendulum of length ℓ . | 5 |
| (b) | In a double slit experiment the second order maximum occurs at $\theta = 0.25^\circ$. The wavelength is 650 nm. Determine the slit separation. | 3 |
| | | |
| 9.(a) | What is Astronomical Telescope? Give its construction and working. Also derive its magnifying power. | 5 |
| (b) | A Carnot engine whose low temperature reservoir is at 7°C has an efficiency of 50%. It is desired to increase the efficiency to 70%. By how many degrees the temperature of the source be increased. | 3 |