

RIZWAN ACADEMY – KASUR

Paper: Physics

Chapter (1 – 2)

Class: F.Sc. Part – I

MEASUREMENTS + VECTORS AND EQUILIBRIUM

Name: _____ Roll No: (in words) _____

OBJECTIVE TYPE

Total Marks: 12

Paper Code: _____

Total Time: 10 Minutes

NOTE: Write your **Roll No.** in space provided. Using lead pencil will result in loss of marks.

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 circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

Sr. No.	QUESTION	A	B	C	D
1.	Nobel prize was awarded to Pakistani scientist	Dr. Qadeer Khan	Dr. Rafi Mohammad	Prof. Abdus Salam	Prof. Mujtaba Karim
2.	The dimension of power is	$[ML^2T^{-2}]$	$[ML^2T^{-3}]$	$[ML^2T^{-1}]$	$[MLT^{-1}]$
3.	$x_1 = 10.5 \pm 0.1 \text{ cm}$ and $x_2 = 26.8 \pm 0.1 \text{ cm}$, then $x = x_2 - x_1$ is given as	$16.3 \pm 0.1 \text{ cm}$	$16.3 \pm 0.2 \text{ cm}$	$16.1 \pm 0 \text{ cm}$	$16.3 \pm 0 \text{ cm}$
4.	Light year is unit of	Time distance	Velocity	Distance	Light
5.	1 revolution	57°	90°	180°	360°
6.	What is the angle between $\hat{j} + \hat{k}$ and \hat{k}	$\pi/3$	$\pi/4$	$\pi/6$	None of these
7.	Considerer a vector $\hat{F} = 7\hat{i} + 5\hat{j}$ another vector that is perpendicular to \hat{F} is	$7\hat{i} - 5\hat{j}$	$7\hat{j}$	$5\hat{i} - 7\hat{j}$	$6\hat{i}$
8.	The angle between $\vec{A} \times \vec{B}$ and $\vec{B} \times \vec{A}$ is	π	$\pi/2$	2π	4π
9.	If $\vec{A} = 1\hat{i} - 6\hat{j} + 3\hat{k}$ and $\vec{B} = -6\hat{i} + 18\hat{j} - 9\hat{k}$ is along $-ve$ x-axis, then	Parallel vectors	Equal vectors	Anti-parallel vectors	None of these
10.	The counterpart of force for rotational motion is called	The linear momentum	The angular momentum	The angular acceleration	The torque
11.	Which is a derived unit	candela	ampere	kelvin	newton
12.	Force in terms of base unit is	$kg \cdot m \cdot s^{-1}$	$kg \cdot m \cdot s^{-2}$	$kg \cdot m$	None of these

SUBJECTIVE TYPE

Total Marks:18

Time Allowed: 0 Hours 40 Minutes

SECTION – I (SHORT QUESTIONS)

2. **Attempt any FIVE questions.** **(5 × 2 = 10) Marks**

- i. Name several repetitive phenomenon occurring in nature which could serve as reasonable time standards.
- ii. Three students measured the length of a needle with a scale on which minimum division is 1 mm and recorded as (i) 0.2145 m (ii) 0.21 m (iii) 0.214m, which record is correct and why?
- iii. Does a dimensional analysis give any information on constant of proportionality that may appear in an algebraic expression? Explain.
- iv. A light year is the distance light travels in one year. How many meters are there in one light year?
- v. Two vectors have unequal magnitudes, can their sum be zero, Explain.
- vi. Suppose the sides of the closed polygon represent vector arranged head to tail. What is the sum of these vectors?
- vii. Is it possible to add a vector quantity to scalar quantity? Explain.

SECTION – II (ESSAY TYPE) Attempt given question

3. **Do as directed...**

- i. Find the resultant of addition of vectors by rectangular components. (5)
- ii. Show that the three vectors $\hat{i} + \hat{j} + \hat{k}$, $2\hat{i} - 3\hat{j} + \hat{k}$ and $4\hat{i} + \hat{j} - 5\hat{k}$ are mutually perpendicular. (3)

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SECTION – III (Practical)

4. (a) Write answer of TWO questions. (2 × 2 = 4)
- i. a
 - ii. c
 - iii. v
 - iv. b
4. (b) Write procedure to determine the resistance of voltmeter by graph method. (3)
- (OR)**
- Write procedure to find the unknown high resistance by using neon flash lamp. (3)
4. (c) Answer the following questions on the basis of graph drawn between potential difference (V) and charge (Q). (4)
- i. What you conclude from the graph?
 - ii. Find the capacitance of capacitor from the graph.

Good Luck

Ch. Khalid Mahmood Ashraf