



**I. Answer any 5 of the following questions:**

[5 x 2 = 10]

1. What do you mean by the term precision and accuracy?
2. What are the limitations of dimensional analysis?
3. State Principle of Homogeneity of dimension.
4. What is frame of reference?
5. Write the difference between a scalar and a vector.
6. Write the difference between distance and displacement.

**II. Answer any 5 of the following questions:**

[5 x 3 = 15]

1. How measurements are made using (i) Vernier caliper and (ii) screw gauge
2. Explain how height of an object could be found by triangulation method.
3. Explain how distance between planets and intruding objects could be found by the application of RADAR.
4. What are the different types of vectors
5. Write a note on (i) Average speed (ii) Instantaneous velocity (iii) Average velocity
6. Derive the relation between linear acceleration and angular acceleration

**III. Answer all the following questions:**

[5 x 5 = 25]

1. Explain the parallax method for determining distance

[OR]

Explain the types of Error in detail.

2. Define and explain the rules for significant figures with examples

[OR]

Explain the uses of Dimensional analysis with one example each.

3. Derive an expression for the resultant vector of two vectors using triangular law of addition with necessary diagram.

[OR]

What is vector product of two vectors? Write any five properties of vector product.

4. Derive the equations of motion of uniformly accelerated bodies.

[OR]

What is scalar product of two vectors? Write any five properties of scalar product.

5. Show that the path of the projectile is a parabola in case of oblique projection.

[OR]

Derive equations for (i) Time of Flight (ii) Resultant velocity of a body at any instant of time  
(iii) Horizontal range and (iv) speed of projectile when it hits the ground in case of horizontal projection.

-----ALL THE BEST-----

Test should be written under the supervision of your parents and get the answer paper signed from them.

No corrections should be made after the test timings. We expect your honesty.

Test Papers have to be submitted after the completion of all the 4 tests.

Submission Date of Test Papers: 1<sup>st</sup> October, 2<sup>nd</sup> October, 3<sup>rd</sup> October

Timings: 9 AM – 12.30 PM / 5 PM- 7 PM