

Course:- B.Sc. Physics (H)

Paper:- GE - Mechanics

Sem:- I

Year:- 2023-24

Teacher:- Ms. Neetu Verma

Deadline:- 08 November 2022

max. marks (15)

Assignment questions

Q1 Find moment of inertia of the following:-

- (i) circular disc
- (ii) annular ring/disc
- (iii) solid cylinders
- (iv) Hollow cylinder
- (v) Spherical shell

Q2 A rigid body is spinning with an angular velocity of 4 radians/second about an axis parallel to $3\hat{j} - \hat{k}$ passing through the point $\hat{i} + 3\hat{j} - \hat{k}$. Find the velocity of the particle at the point $4\hat{i} - 2\hat{j} + \hat{k}$.

Q3 Describe the physical significances of derivative, double derivative, curl, gradient & divergence.

Q4 Calculate the length of a rod moving with a velocity of $0.6c$ in a direction inclined at 30° to its own length. Proper length of rod is given to be 1m .

Q5 An experimenter on the Earth observes galaxy A to be receding in a particular direction at a speed $\beta_1 = 0.3$ and galaxy B receding in the opposite direction with $\beta_2 = 0.4$. What is the speed of recession of galaxy A for an observer in galaxy B?

Neetu Verma

Ms. Neetu Verma

Assistant Professor

Physics Department
Shivaji College