

Anjuman Islam Janjira Degree College of Science Murud-Janjira, Raigad-402401 Affiliated to University of Mumbai	
Class: -F.Y.B.Sc.	Subject: - Meior Physics
Semester: - I Additional	Course code: -USPH101
Exam Event: - (FH) Summer 2025	Marks: - 30
Date: - 19/04/2025	Duration: - 1 Hours

N.B.

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Draw neat labelled diagrams wherever necessary.

Q: 1 A) Attempt any ONE of the following.

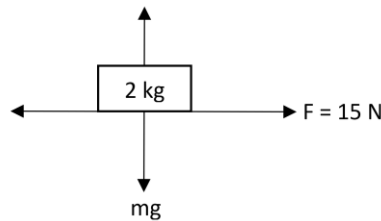
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- 1) Explain the Newton's Laws of Motion and describe its applications in real-world scenarios.
- 2) Describe the concept of kinetic energy and work energy theorem.

Q: 1 B) Attempt any ONE of the following.

05

- 1) A person lifts suitcase of 20 kg from platform and put it on his head 2 m above the platform calculate the work done by person on the suitcase (given $g = 9.8 \text{ m/s}^2$)
- 2) A block of mass 2 kg is kept on horizontal surface when a horizontal force of 15 N is applied to it the block does not slip. Calculate the coefficient of static friction.



Q: 2 A) Attempt any ONE of the following.

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- 1) Evaluate the concept of law of conservation of linear momentum.
- 2) Solve the following question,
 - i) Explain the concept of oscillatory motion, damped harmonic motion, forced oscillation.
 - ii) Discuss the concept of resonance with examples.

Q: 2 B) Attempt any ONE of the following.

05

- 1) A lift is ascending at acceleration of 4 m/s^2 what is period of a simple pendulum of length 1 m suspended in the lift. (given $g = 9.8 \text{ m/s}^2$)
- 2) Two particles each of mass 3 kg are located at coordinates (2,0) m and (-2,0) m moving along the x- axis with velocity 4 m/s and -4 m/s respectively. Find the total angular momentum about the origin.