

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.

B.Sc.(Physics) - END SEMESTER EXAMINATIONS APRIL-2023

SEMESTER - II

22UPHCT2004 - Mechanics

Total Duration : 2 Hrs 30 Mins.

Total Marks : 60

Section B

Answer any **SIX** questions ($6 \times 5 = 30$ Marks)

1. Briefly describe about Interchangeability of Centre of suspension and Centre of oscillation.
2. Interpret and differentiate about centre of gravity and centre of mass.
3. Relate the Bernoulli's theorem with Venturimeter and Pitot tube.
4. Briefly describe about different types of vacuum pumps for high vacuum.
5. Explain about Holonomic and non-Holonomic constraints.
6. Solve the derivation of Lagrange's equation of motion.
7. Predict the physical significance of Hamiltonian function-H.
8. Distinguish and evaluate the Centre of gravity and centre of pressure.

Section C

Answer any **THREE** questions ($3 \times 10 = 30$ Marks)

9. Describe about acceleration due to gravity (g) using compound pendulum.
10. Compute the centre of gravity of a solid hemisphere.
11. Discriminate the low pressure and high vacuum, briefly explain about single Pirani gauge.
12. Predict about Scleronomics and Rheonomic constraints- Generalised coordinates?
13. Obtain and evaluate the equation of motion of simple pendulum.
