

B.Sc. Semester – 1 (NEP-2020) Examination

January-2024

Mechanics and Solid-State Electronics (Minor)

Time: 2:00 Hours

Marks: 50

Instructions:

1. All questions are compulsory.
 2. Figures to the right indicate marks.
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Que.1 Derive an equation of motion for simple harmonic motion. (10)

OR

Que.1 Explain simple pendulum and derive equations of angular frequency and time period.

Que.2 Explain types of Stress and Strains. (10)

OR

Que.2 Explain torsion pendulum and derive an equation of the moment of inertia of an irregular body.

Que.3 Discuss an n - type and p - type semiconductor. (10)

OR

Que.3 Explain properties of pn-junction and forward biasing of pn-junction.

Que.4 Write a note on damped oscillations. (10)

OR

Que.4 Explain modulus of rigidity, Young's modulus and Bulk modulus.

Que.5 (A) Write a note on Poisson's ratio. (05)

(B) Explain Breakdown voltage. (05)

OR

Que.5 Explain Volt-Ampere characteristics of pn-junction. (10)
