

## B.Sc. Semester - 2 (NEP-2020) Examination

MARCH/APRIL-2026

## PHY: Mechanics and Solid-State Electronics (Minor-2)

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    Answers the following questions (any two). (10)
- 1) What is an escape velocity? Derive its expression.
  - 2) Write a note on GPS.
  - 3) Discuss motion of planets and satellite in circular orbit
- Que. 2    Answers the following questions (any two). (10)
- 1) Explain the working of full wave bridge rectifier.
  - 2) Derive an expression for the efficiency of a half wave rectifier.
  - 3) Explain Series inductor filter and Choke input LC filter.
- Que. 3    Answers the following questions (any two). (10)
- 1) Explain common emitter connection in detail.
  - 2) Explain base resistor method for transistor biasing.
  - 3) Describe voltage divider bias method for transistor biasing.
- Que. 4    Answers the following questions (any five). (10)
- 1) Discuss Newton's law of gravitation.
  - 2) What is Gravitational field?
  - 3) Explain Gravitational potential energy.
  - 4) Explain semiconductor diode in brief.
  - 5) Explain Voltage Stabilization.
  - 6) Draw the circuit diagram of  $\pi$ -filter with input and output waveform.
  - 7) Explain comparison of transistor connections.
  - 8) Define Stability factor.
  - 9) Write the names of transistor biasing methods.
- Que. 5    Answers the following questions (any two). (10)
- 1) Discuss weightlessness.
  - 2) Explain the working of half wave rectifier.
  - 3) Write a note on transistor.

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