GATE 2026 PH Question Paper

Time Allowed :3 Hour	Maximum Marks :100	Total Questions :65

General Instructions

Please read the following instructions carefully:

1. This question paper is divided into three sections:
   - **General Aptitude (GA):** 10 questions (5 questions × 1 mark + 5 questions × 2 marks) for a total of 15 marks.
   - **Environmental Science and Engineering + Engineering Mathematics:**
     - **Part A (Mandatory):** 36 questions (1 questions × 1 mark + 19 questions × 2 marks) for a total of 55 marks.
     - **Part B (Section 1):** Candidates can choose either Part B1 (Surveying and Mapping) or Part B2 (Section 2). Each part contains 16 questions (8 questions × 1 mark + 11 questions × 2 marks) for a total of 30 marks.
2. The total number of questions is **65**, carrying a maximum of **100 marks**.
3. The duration of the exam is **3 hours**.
4. Marking scheme:
   - For 1-mark MCQs, $\frac{1}{3}$ mark will be deducted for every incorrect response.
   - For 2-mark MCQs, $\frac{2}{3}$ mark will be deducted for every incorrect response.
   - No negative marking for numerical answer type (NAT) questions.
   - No marks will be awarded for unanswered questions.
5. Ensure you attempt questions only from the optional section (Part B1 or Part B2) you have selected.
6. Follow the instructions provided during the exam for submitting your answers.

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1. For a particle executing simple harmonic motion, the restoring force is proportional to:

(A) Velocity of the particle
(B) Square of displacement
(C) Displacement from mean position
(D) Acceleration of the particle

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2. The eigenvalues of the Hamiltonian operator represent the:

(A) Momentum of the system
(B) Energy of the system
(C) Position of the particle
(D) Probability density

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3. The solution of Laplace's equation satisfies which condition?

(A) It has a maximum inside the domain
(B) It has a minimum inside the domain
(C) It satisfies the maximum–minimum principle
(D) It diverges at the boundary

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4. Which of the following Maxwell's equations represents Faraday's law of electromagnetic induction?

(A) $\nabla \cdot \mathbf{E} = \frac{\rho}{\epsilon_0}$
(B) $\nabla \cdot \mathbf{B} = 0$
(C) $\nabla \times \mathbf{E} = -\frac{\partial \mathbf{B}}{\partial t}$
(D) $\nabla \times \mathbf{B} = \mu_0 \mathbf{J}$

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5. For an ideal gas undergoing an adiabatic process, which quantity remains constant?

(A) Temperature
(B) Pressure
(C) PV^γ
(D) Volume

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6. Which of the following solids has a completely filled valence band and a large band gap?

(A) Conductor
(B) Semiconductor
(C) Insulator
(D) Superconductor

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7. Which particle is emitted during beta-minus decay?

(A) Proton
(B) Neutron

(C) Positron
(D) Electron
