GATE 2026 EY 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.

1. One hypothesis for why the tropics have far greater species richness than higher latitudes is that the tropics are relatively aseasonal. Low seasonality can encourage high species richness through which one or more of the following mechanisms?

(A) Numerous resources are consistently available throughout the year, allowing different species to specialize on different resources, thereby minimizing competition and allowing co-existence.
(B) Low seasonality is associated with lower rates of predation, allowing large populations to thrive.
(C) Low seasonality is associated with more stable populations that are less vulnerable to demographic stochasticity and extinction.

(D) Low seasonality is associated with longer generation times, which enhances species richness.

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2. You are a plant ecologist studying a plant in the genus *Veronica*. You notice that, at open rocky sites, *Veronica* grows as a creeper spreading low to the ground, whereas in grasslands, the stem stands upright. You collect seeds from multiple populations in each habitat type and grow them under uniform conditions in a greenhouse. You find that all the plants grown in the greenhouse have stems that stand upright. Which one or more of the following explanations best support(s) your observations?

(A) The different morphologies in the natural habitat types are due to phenotypic plasticity.
(B) Inbreeding depression has led to the creeping form in the rocky sites.
(C) High gene flow between populations has restricted local adaptation in the two environments.
(D) The morphological differences between populations demonstrates that growth form is a polygenic trait.

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3. In conservation biology, which one or more of the following is/are used to calculate the effective population size, N_e?

(A) The population size required to avoid local extinction in the next 1000 years.
(B) The carrying capacity of the environment.
(C) The sum of the sizes of all connected populations in a metapopulation.
(D) The number of breeding males and females.

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4. Which one or more of the following is/are greenhouse gas(es)?

(A) Methane
(B) Water vapour
(C) Sulphur dioxide
(D) Nitrous oxide

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5. Honey bees are haplodiploid, which means that the relatedness is, on average, expected to be 0.75 between

(A) brother-brother pairs with the same parents.
(B) brother-sister pairs with the same parents.
(C) mated female-male pair.
(D) sister-sister pairs with the same parents.

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6. Observations of algal species showed that their diversity was higher in pools where there were grazing snails compared to pools without snails. Which one of the following statements best explains this result?

(A) Snails feed preferentially on the more abundant algal species.
(B) Snails avoid feeding on algal species.
(C) Snails feed only on the less abundant algal species.
(D) Snails feed equally on all the algal species irrespective of algal abundance.

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7. An ornamental shrub species was brought from Japan in the early 1800s to India, where it was planted frequently in gardens and parks. The species persisted for many decades without spreading, and then began to spread invasively fifty years ago. Which one or more of the following processes could have led to it becoming invasive?

(A) Evolutionary adaptation to the environment
(B) Open niches due to recent habitat degradation
(C) Climate change
(D) Recent introduction of a specialized herbivore of this shrub species

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8. During the process of succession in a community, species that are good colonisers are gradually replaced by species that are good competitors. Which one or more of the following statements is/are consistent with this pattern?

(A) Initially, there is great resource limitation.
(B) Keystone species must establish first to facilitate the later establishment of higher trophic level species.

(C) Trees are the climax stage of terrestrial communities and generally have low competitive ability, but high dispersal ability.
(D) For many taxa, there is a tradeoff between dispersal ability and local competitive ability.
