TS PGECET 2025 Question Paper (Memory based)

Time Allowed :2 Hours	**Maximum Marks :**120	**Total questions :**120

General Instructions

Read the following instructions very carefully and strictly follow them:

1. **Mode of Examination:** Online (Computer-based examination)
2. **Medium of Exam:** English
3. **Duration of Exam:** 2 hours
4. **Type of Questions:** Multiple-choice questions
5. **Number of Questions:** 120 Questions
6. **Total Marks:** 120 Marks
7. **Marking Scheme:**
   - 1 mark for each correct answer.
   - No negative markings for incorrect answers.

1. Which of the following is not a principle of sustainable development?

(A) Intergenerational equity

(B) Integration of environmental, social, and economic factors

(C) Maximization of resource exploitation

(D) Polluter pays principle

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2. The Environmental Impact Assessment (EIA) is used to:

(A) Estimate the financial profitability of a project

(B) Predict environmental consequences of proposed initiatives

(C) Replace the need for environmental regulations

(D) Design new energy-efficient equipment

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3. Which of the following techniques is most commonly used for imaging at the nanoscale?

(A) Optical microscopy

(B) Scanning Electron Microscopy (SEM)

(C) X-ray diffraction

(D) Transmission Electron Microscopy (TEM)

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4. The quantum confinement effect in nanoparticles is observed when:

(A) The particle size is larger than 1 micron

(B) The particle size is smaller than the electron's de Broglie wavelength

(C) The particle is in a vacuum

(D) The temperature is near absolute zero

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5. Which one of the following gases is not a greenhouse gas?

(A) Methane (CH_4)

(B) Carbon dioxide (CO_2)

(C) Nitrous oxide (N_2O)

(D) Oxygen (O_2)

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6. The ISO 14001 standard deals with:

(A) Quality Management Systems

(B) Financial Management Systems

(C) Environmental Management System

(D) Occupational Health and Safety

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7. Bioremediation is a process used to:

(A) Increase crop yield using synthetic fertilizers

(B) Treat environmental pollutants using microorganisms

(C) Control noise pollution in urban areas

(D) Enhance fossil fuel combustion efficiency

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8. The top-down approach in nanofabrication refers to:

(A) Building structures atom-by-atom

(B) Assembling molecules using biological processes

(C) Carving or shaping materials into nanoscale structures

(D) Using chemical vapor deposition for coating

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9. Which of the following materials exhibits superparamagnetism at the nanoscale?

(A) Gold nanoparticles

(B) Silicon nanowires

(C) Iron oxide nanoparticles

(D) Carbon nanotubes

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10. The surface area-to-volume ratio of nanoparticles:

(A) Remains constant regardless of size

(B) Decreases with decreasing particle size

(C) Increases with decreasing particle size

(D) Has no impact on chemical reactivity

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11. The term “carrying capacity” refers to:

(A) The maximum number of species that can be supported in a specific habitat

(B) The ability of the environment to recover from human impact

(C) The total energy consumed by humans over a period

(D) The number of natural disasters an area can withstand

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12. Which of the following is an example of non-point source pollution?

(A) Factory effluents

(B) Oil spills

(C) Agricultural runoff

(D) Industrial waste disposal

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13. In which year was the Earth Summit (Rio Conference) held?

(A) 1985

(B) 1992

(C) 2000

(D) 2012

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14. Which of the following techniques is primarily used for the synthesis of carbon nanotubes?

(A) Atomic Layer Deposition (ALD)

(B) Chemical Vapor Deposition (CVD)

(C) Electrospinning

(D) Hydrothermal Synthesis
