

AP PGECET Shift 2 Question Paper

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 processes is primarily used for the removal of suspended solids from water?

- (1) Filtration
 - (2) Coagulation
 - (3) Sedimentation
 - (4) Disinfection
-

2. Find the eigenvalues of the matrix:

$$A = \begin{bmatrix} 4 & 1 & 2 \\ 1 & 3 & 0 \\ 2 & 0 & 5 \end{bmatrix}$$

- (1) 1, 5, 6
 - (2) 3, 4, 7
 - (3) 2, 3, 8
 - (4) 1, 2, 9
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3. The Carnot efficiency of a heat engine depends on the temperature of the:

- (1) Hot reservoir only
 - (2) Cold reservoir only
 - (3) Difference between the hot and cold reservoirs
 - (4) Volume of the engine
-

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5. A convex lens has a focal length of 10 cm. An object is placed at a distance of 15 cm from the lens. The image formed will be:

- (1) Real and inverted

- (2) Virtual and upright
 - (3) Real and upright
 - (4) Virtual and inverted
-

6. The flow of an incompressible fluid is described by the Bernoulli equation. Which of the following quantities is not conserved along a streamline in steady flow?

- (1) Pressure
 - (2) Kinetic energy
 - (3) Potential energy
 - (4) Volume flow rate
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7. In a TCP/IP model, which of the following is the layer responsible for routing packets between different networks?

- (1) Application layer
 - (2) Transport layer
 - (3) Network layer
 - (4) Data Link layer
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8. A fair coin is flipped three times. What is the probability of getting exactly two heads?

- (1) $1/8$
 - (2) $1/4$
 - (3) $3/8$
 - (4) $1/2$
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9. An object is thrown vertically upwards with an initial velocity of 10 m/s. How long will it take for the object to return to its starting point?

- (1) 2 seconds
 - (2) 1 second
 - (3) 3 seconds
 - (4) 5 seconds
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10. The most commonly used material in modern construction for making beams and columns is:

- (1) Steel
 - (2) Aluminum
 - (3) Concrete
 - (4) Wood
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11. Which of the following processes is used for shaping metal by pressing it into a mold under high pressure?

- (1) Casting
 - (2) Forging
 - (3) Extrusion
 - (4) Injection molding
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12. In a simply supported beam with a uniform load, the shear force is maximum at:

- (1) The midpoint of the beam
 - (2) The support
 - (3) The center of the span
 - (4) At the end of the beam
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