

Karnataka PGECET 2025 Question Paper

Time Allowed :2 Hours

Maximum Marks :100

Total questions :75

General Instructions

Read the following instructions very carefully and strictly follow them:

1. **Mode of exam:** Offline (Pen and Paper Based Test)
2. **Duration:** 2 hours
3. **Question type:** MCQs
4. **Total marks:** 100
5. **Total questions:** 75
6. **Marking scheme:**
 - 50 questions \times 1 mark
 - 25 questions \times 2 marks
7. **Negative marking:** No

1. Solve the following differential equation:

$$\frac{d^2y}{dx^2} + 4\frac{dy}{dx} + 4y = 0$$

- (a) $y = (C_1 + C_2x)e^{-2x}$
 - (b) $y = C_1e^{-2x} + C_2xe^{-2x}$
 - (c) $y = C_1e^{2x} + C_2xe^{2x}$
 - (d) $y = (C_1 + C_2x)e^xe^x$
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2. Which of the following is not a valid data type in C?

- (a) int
 - (b) float
 - (c) real
 - (d) char
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3. The efficiency of a Carnot engine depends on:

- (a) The temperature of the hot reservoir only
 - (b) The temperature of the cold reservoir only
 - (c) Both the temperatures of the hot and cold reservoirs
 - (d) The working substance used
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4. In a series RLC circuit, if the frequency of the applied voltage is increased, the impedance of the circuit:

- (a) Increases

- (b) Decreases
 - (c) Remains constant
 - (d) First increases then decreases
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5. The modulus of elasticity of concrete is approximately:

- (a) 10,000 MPa
 - (b) 20,000 MPa
 - (c) 30,000 MPa
 - (d) 40,000 MPa
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6. Which of the following is the main component of natural gas?

- (a) Methane
 - (b) Ethane
 - (c) Propane
 - (d) Butane
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7. In a transistor, the current gain is defined as:

- (a) $\beta = \frac{I_C}{I_B}$
 - (b) $\beta = \frac{I_E}{I_B}$
 - (c) $\beta = \frac{I_C}{I_E}$
 - (d) $\beta = \frac{I_B}{I_E}$
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8. The primary function of a Wheatstone bridge is to measure:

- (a) Voltage
 - (b) Current
 - (c) Resistance
 - (d) Inductance
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9. In a communication system, the bandwidth of a signal is:

- (a) The difference between the highest and lowest frequencies
 - (b) The highest frequency only
 - (c) The lowest frequency only
 - (d) The sum of the highest and lowest frequencies
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10. Which of the following is a non-invasive method to measure blood pressure?

- (a) Sphygmomanometer
 - (b) Electrocardiogram
 - (c) Pulse oximeter
 - (d) Stethoscope
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