

GATE PREP Worksheets




Name: _____

Date: _____



Instructions:

Answer the questions and solve the problems. If you're unsure about an answer or need help, don't hesitate to seek assistance. This worksheet is meant to assess your readiness for the GATE exam.


Section 1: Engineering Knowledge

-  Define the term "entropy" as used in thermodynamics.
-  Explain the concept of "strain" in materials engineering.
-  In electrical engineering, what is the purpose of a transformer?




Section 2: Mathematics

-  Solve the following differential equation: $(dy/dx) - 2y = 0$ with the initial condition $y(0) = 3$.
-  Compute the determinant of the following 3x3 matrix:



$$\begin{bmatrix} 2 & 0 & 1 \\ 1 & 3 & 2 \\ -2 & 1 & 1 \end{bmatrix}$$

-  Find the limit $\lim_{x \rightarrow 0} ((e^x) - 1) / x$.



Section 3: General Aptitude

-  Rewrite the sentence, "Despite her tiredness, she kept working" using "although."
-  If the word "THREE" is written as "XSIVI," how is "NINE" written in the same code?
-  Solve the following analogy: • Hand is to Glove as Foot is to _____.

Section 4: Problem-Solving

-  Solve the following physics problem: A car accelerates from rest at a constant rate of 3 m/s². How long does it take for the car to reach a speed of 60 m/s?
-  Solve the following numerical methods problem: Use the bisection method to find a root of the equation $f(x) = (x^3) - 3(x^2) - 5 = 0$ in the interval $[-2, 2]$ correct to three decimal places.

Section 5: Advanced Concepts (Optional)

-  Describe the concept of Fourier analysis in signal processing.
-  What is the importance of control theory in electrical engineering?

Bonus Challenge: Provide a brief explanation of any two of the topics covered in your specific GATE exam syllabus.

Remember to review your answers and work through the problems carefully. GATE exams require thorough preparation and understanding of the relevant subjects. Good luck with your GATE preparation!