JEE PREP Worksheets

Name: _____

Date: _____

Instructions:

Answer the questions and solve the problems. Seek assistance if you're unsure about an answer. This worksheet aims to assess your readiness for the JEE exam.

Section 1: Physics

- Explain the concept of "Newton's laws of motion." Provide brief descriptions of the three laws.
- Define "refraction" and explain why it occurs when light travels from one medium to another.
- A car accelerates uniformly from rest and reaches a speed of 25 m/s in 5 m/s. Calculate the car's acceleration.

Section 2: Chemistry

- Describe the concept of "stoichiometry" in chemical reactions.
- Write the chemical equation for the reaction between hydrochloric acid (HCl) and sodium hydroxide (NaOH), and balance the equation.
- Explain the terms "endothermic" and "exothermic" reactions in chemistry.

Section 3: Mathematics

- Solve the following trigonometric equation for $0 \leq \theta \leq 360°$: $\sin(\theta)^2 + \cos(\theta)^2 = 0$
- Differentiate the function $f(x) = 3x - 5x + 2$ with respect to x.
- Solve the following system of linear equations for x and y:

    $3x + 2y = 7$

    $2x - y = 5\ 2\ 2\ 4\ 2$

Section 4: General Aptitude

- Rewrite the sentence, "The concert was enjoyable because the band played their best songs" using "since."
- If "WATER" is coded as "XBUFS," how is "EARTH" coded in the same way?
- Solve the following analogy: Fire is Hot as Ice is to _____.

Section 5: Problem-Solving

- Solve the following physics problem: A ball is thrown vertically upward with an initial velocity of 20 m/s. How high will it go, and how long will it take to reach its highest point?
- Solve the following calculus problem: Find the indefinite integral of $\int (2x - 5x + 3x - 7)\, dx$.

Section 6: Advanced Concepts (Optional)

- Describe the concept of "quantum mechanics" and its significance in modern physics.
- Explain the role of "chemical kinetics" in understanding reaction rates and mechanisms in chemistry.

Bonus Challenge: Provide a brief explanation of any two specific topics from your JEE exam syllabus.

Review your answers and practice problem-solving. JEE exams demand a strong foundation in physics, chemistry, and mathematics, so thorough preparation is essential. Best of luck with your JEE preparation!