The rules for this quiz are as follows:

- **Write your name in the upper-right hand corner of the quiz.**
- This quiz will last for 10 minutes.
- Show **ALL** work for partial/full credit. This includes any definitions, mathematics, figures, etc.
- No collaboration of any kind is allowed on the quiz.
- The quiz is closed book and closed notes.
- Calculators are allowed on the quiz provided they are only used for basic computations.

1. (10 points) Convert the following third-order ODE into an equivalent system of first-order ODEs:

   \[ y^{(3)}(t) + t^3 y''(t) + 5y'(t) + \sin(t) y(t) = e^{6t}. \]