淡江大學 104 學年度日間部轉學生招生考試試題

系別：工組三年級　　科目：工 程 數 學

考試日期：7 月 26 日(星期日) 第 4 節　　本試題共　4　大題，　1　頁

1. Consider first Differential Equation:

$$1+(3x-e^{-2y})y'=0$$

Find the general solution? (25%)

2. The second order I.V.P homogeneous equation:
find the solution of equation: (25%)

$$x^2y''-xy'=0, y(2)=5, y'(2)=8$$

3. Solve $y''+4y'+3y=e^t, y(0)=0, y'(0)=0$
by using the Laplace Transform. (25%)

4. Find the Fourier Sine integral representations of the function f and also determine to what each integral converges? (25%)

$$f(x)=\begin{cases}1 & \text{for } 0 \leq x \leq \pi/2\\ 2 & \text{for } \pi/2 < x \leq \pi\end{cases}$$