#Jenny

Finally I get this ebook, thanks for all these I can get now!

#Rio

Cool! I'am really happy

#Markus Jensen

I did not think that this would work, my best friend showed me this website, and it does! I get my most wanted eBook

#Hun Tsu

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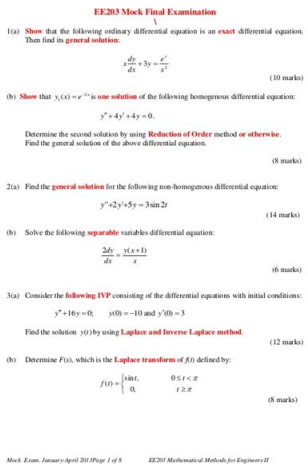
#Che Salsa

My friends are so mad that they do not know how I have all the high quality ebook which they do not!

#Diego Butler

so many fake sites. this is the first one which worked! Many thanks



EE203 Mock Final Examination

1(a) **Show** that the following ordinary differential equation is an **exact** differential equation. Then find its **general solution**:

$$x\frac{dy}{dx}+3y=\frac{e^x}{x^2}$$

(10 marks)

(b) **Show** that $y_1(x)=e^{-2x}$ is **one solution** of the following homogenous differential equation:

$$y''+4y'+4y=0.$$

Determine the second solution by using **Reduction of Order** method **or otherwise**. Find the general solution of the above differential equation.

(8 marks)

2(a) Find the **general solution** for the following non-homogenous differential equation:

$$y''+2y'+5y=3\sin 2t$$

(14 marks)

(b) Solve the following **separable** variables differential equation:

$$\frac{2dy}{dx}=\frac{y(x+1)}{x}$$

(6 marks)

3(a) Consider the **following IVP** consisting of the differential equations with initial conditions:

$$y''+16y=0; \quad y(0)=-10 \text{ and } y'(0)=3$$

Find the solution $y(t)$ by using **Laplace and Inverse Laplace method**.

(12 marks)

(b) Determine $F(s)$, which is the **Laplace transform** of $f(t)$ defined by:

$$f(t)=\begin{cases}\sin t, & 0\le t<\pi\\ 0, & t\ge\pi\end{cases}$$

(8 marks)

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