

**Course No:** CVL 2304  
**Course Title:** Advanced Math  
**Date:** 24/03/2012  
**No. of Questions:** (6)  
**Time:** One and a half hours  
**Using Calculator (No)**

**University of Palestine**



**Midterm Exam**  
**Spring 2011/2012**  
**Total Grade:**

**Instructor Name:** Wael AbuShammal  
**Student No.:** \_\_\_\_\_  
**Student Name:** \_\_\_\_\_  
**College Name:** \_\_\_\_\_  
**Dep. / Specialist:** \_\_\_\_\_  
**Using Dictionary (No)**

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### Question One:

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(10 Points) Solve the ODE :

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

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## Question Two:

(10 Points) Solve the IVP :

$$\frac{d^2y}{dx^2} - 6\frac{dy}{dx} - 16y = 0$$
$$y(0) = 1, \frac{dy}{dx}(0) = 5$$

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### Question Three:

(10 Points) Solve the ODE :

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

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#### Question Four:

(10 Points) Solve the ODE :

$$\frac{dy}{dx} = \frac{x^2 + xy + y^2}{x^2} , \quad y(1) = 3$$

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### Question Five :

( 20 Points ) Solve the ODE :

$$ydx + (2x - ye^y)dy = 0$$

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### Question Six :

(10 Points ) Solve the ODE :

$$4 \frac{d^2 y}{dx^2} - 12 \frac{dy}{dx} + 9y = 0$$

End of Questions  
*Good Luck*