Course Title: <u>Advanced Math</u>

University of Palestine

Student No.: _____

No. of Questions: <u>3 Questions</u>

Time: **1** hours

Student Name: _____

Total Grade: 15

Midterm Exam

Answer All Questions .

First Question

6/15

1) Solve the D.E

a) $\quad x\dfrac{dy}{dx} + y = e^{x} \qquad y\,(1)=2$

b) $\quad (\sin y - y\,\sin x)\,dx + (\cos x + x\,\cos y - y)\,dy = 0$

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Second Question

2) Use appropriate substitution to solve two of the following D.E

a) $\quad 6xy\,dx + (4y + 9x^{2})\,dy = 0$

b) $\quad (y^{2} + yx)\,dx + x^{2}dy = 0$

c) $\quad x\dfrac{dy}{dx} + y = y^{-2}$

Third Question

3/15

3) Solve the following D.E

$$\frac{dy}{dx} = \frac{xy + 3x - y - 3}{xy - 2x + 4y - 8}$$

GOOD LUCK