

(093)Math132:Applied-Calculus-QuizTest-4(115.1-17.1-2-5):Aug.18, 2010

Dr. Latif and Dr. Raja Latif and Dr. Muhammad Latif and Dr. Abdul Latif

Contents

Marks: 20; Time: 20 Minutes

NAME:.....

I.D.#:

--	--	--	--	--	--

SERIAL #-----

	<i>Serial Number</i>	10 : 30 AM Section 01
--	----------------------	--------------------------

NOTE: SHOW ALL STEPS OF THE SOLUTION.

NO CREDIT FOR ANSWERS WITHOUT COMPLETE SOLUTION.

The questions are not in any order of difficulty at all.

Only the nonprogramable calculators are allowed.

Write the simplified answer of each question at the end of each question.

Q.1. (Marks : 10). Find the value of the definite integral by using integration by parts.

$$\int_0^1 16x^2 e^{-4x} dx.$$

Q.2. (Marks : 10) A company that manufactures computers has determined that its production function is given by

$$p(x, y, z) = 500x + 800y + 3x^2y + x^3 - \frac{y^4}{4}$$

where x is the size of the labor force (measured in work-hours per week) and y is the amount of capital (measured in units of \$ 1000) invested. Find the marginal productivity of labor and capital $x = 50$ and $y = 20$.

$$\left. \frac{\partial p}{\partial x} \right|_{x=50, y=20} = \text{-----}$$

$$\left. \frac{\partial p}{\partial y} \right|_{x=50, y=20} = \text{-----}$$