

College Name: \_\_\_\_\_

Student Name: \_\_\_\_\_ Father's Name: \_\_\_\_\_

Copy No: \_\_\_\_\_

**KARACHI UNIVERSITY BUSINESS SCHOOL**  
**UNIVERSITY OF KARACHI**  
**FINAL EXAMINATION AFFILIATED COLLEGES; JUNE 2016**  
**BUSINESS MATHEMATICS BA(BS) – 511 (PART B)**  
**BBA – V**

Date: July 14, 2016

Max Time: 2.5 Hrs

Max Marks: 50

**INSTRUCTIONS:**

1. Attempt ANY 5 questions. Do not write anything on the question paper.
2. Return question paper with your answer script. Without question paper your answer script will not be assessed.
3. Mobile phone(s) or any other communicating device will not be allowed in the examination room. Students will have to remove the batteries of these devices before entering the examination hall.

$$2x + 4y = 8$$

- Q1. Solve the system of equations  $x + y = 2$  also verify your results.
- Q2. Define Break-Even Model with the help of graph, If the fixed cost of production for a commodity is Rs.55, 000 and the variable cost is 35% of the selling price of 15 rupees per unit. What is the break-even quantity of the production?
- Q3. A businessman deposited Rs.120,000 in a credit account which pay interest @ 6% per year compounding semi-annually, calculate the total amount for 3 years.
- Q4. The total cost of producing  $q$  units of a certain product is described by the function

$$C = 100,000 + 1,500q + 0.2q^2$$

Where  $C$  is the total cost stated in dollars. Determine the number of units of  $q$  that should be produced in order to minimize the average cost per unit.

- Q5. A manufacturer produces their production by two units, Unit 'A' makes 150 LED TV set and 800 Smart TV set in a month. Another unit 'B' makes 440 LED TV and 860 Smart TV in a month. Represent the information into matrix form, also find the production of each unit in the duration of one financial year.

- Q6. Compute the exponential function  $f(x) = x^2 + 3x - 4e^x$ , for  $f(0)$ ,  $f(-3)$ , and  $f(1)$

- Q7. Find the derivative of following functions (any One)

(i)  $f(x) = \frac{10-x}{x^2+2}$       (ii)  $f(x) = (x^2 - 2x)(x^6 + 6x^2)$

- Q8. A point moves in a straight line so that its distance  $S$  (in meters) after time ' $t$ ' (in second) is  $S = 4t^2 + 16t + 12$ . Find the average rate of change at  $t = 1$  (using differential method)
- Q9. Determine the maximum and minimum point on the curve  $f(x) = x^3 - 9x^2 + 15x + 3$ .  
Also draw the graph.
- Q10. Determine the present value of a series of 8 annual payments of Rs.30,000 each, the first of which begin 1 year from today. Assuming the rate of interest at 6% per year compounding annually.

**END OF SUBJECTIVE PAPER**