

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

Student Name: \_\_\_\_\_ Seat No: \_\_\_\_\_

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

**KARACHI UNIVERSITY BUSINESS SCHOOL**  
**UNIVERSITY OF KARACHI**  
**FINAL EXAMINATION, DECEMBER 2016; AFFILIATED COLLEGES**  
**BUSINESS MATHEMATICS; BA (H)-322**  
**BBA – II**

Date: December 20, 2016

Max Time: 2 Hrs  
Max Marks: 50

**INSTRUCTIONS:**

1. Attempt any 5 questions. Do not write anything on the question paper
2. 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.

**Q.No.1** Find the limit of the following function (Any two)

(i)  $f(x) = \lim_{x \rightarrow 13} \frac{\sqrt{x-4}-3}{x-13}$       (ii)  $f(x) = \lim_{x \rightarrow 0} \frac{\frac{1}{x+6} - \frac{1}{6}}{x}$       (iii)  $f(x) = \lim_{x \rightarrow 5} \frac{x^2-25}{x^2+x-30}$

**Q.No.2.** Determine the tangent and normal lines of the function  $f(x) = 3x^2 + 2xe^x + 6$  at the point (2,3)

**Q.No.3.** Find the derivative of the following function (any Two)

(i)  $f(x) = \sqrt{x^2 + 2x - 1}$       (ii)  $f(x) = 12(2x-1)[(3x^2 - 3x + 8)^3]$       (iii)  $f(x) = \frac{3x+4}{2x+1}$

**Q.No.4.** The average Cost function of a firm is given as:

$$C = 25000 - 180Q + 0.50Q^2$$

The operational manager is interested to find what level of output (Q) may be produce so that the firm will minimize its average cost.

**Q.No.5.** Solve any one of the following differential equation

(i)  $y \frac{dy}{dx} = x+1$  at (2,4)      (ii)  $y \frac{dy}{dx} = \frac{8x+1}{y}$ , at  $y(1) = -5$

**Q.No.6.** Maximize the function  $Z = 3x + 4y$

$$2x + 4y \leq 1600$$

$$6x + 2y \leq 1700$$

Subject to

$$y \leq 350$$

$$x \geq 0; y \geq 0$$

**Q.No.7.** Find the Total Minimum Transportation Costs, whereas Supply and Demand of particular product, cost charges to shift the product from source to destination is given bellow:

|         |    | Destinations |        |        | Supply |
|---------|----|--------------|--------|--------|--------|
|         |    | D1           | D2     | D3     |        |
| Sources | S1 | Rs.200       | Rs.100 | Rs.300 | 7      |
|         | S2 | Rs.400       | Rs.500 | Rs.600 | 8      |
| Demand  |    | 5            | 6      | 4      |        |

END OF SUBJECTIVE PAPER