

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

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

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

**KARACHI UNIVERSITY BUSINESS SCHOOL**  
**UNIVERSITY OF KARACHI**  
**FINAL EXAMINATION JUNE 2017; AFFILIATED COLLEGES**  
**BASIC MATHEMATICS – I; BA (H)–321**  
**BBA – I**

Date: June 13, 2017

Max Time: 100 Mins  
Max Marks: 40

**INSTRUCTIONS:**

1. Attempt any 4 questions. Do not write anything on the question paper, **EXCEPT** Initials mentioned above.
2. Mobile phones 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.

- Q1 a) An individual invests Rs 25,000 in a money market fund which is expected to yield interest at a rate of 12 percent per year compounded quarterly. If the interest remain stable, to what amount should the Rs 25,000 grow over the next 05 years? How much interest will be earned during this period?
- b) IF Rs 2,000 is to grow to Rs 5,000 over a 12 years period, at what annual rate of interest be invested, given that interest is compounded annually

- Q2 a) Find the inverse of A, and show that  $A^{-1}A = I$

$$\begin{bmatrix} 3 & 5 \\ 2 & 4 \end{bmatrix}$$

- b) For the quadratic equation  $y = -2x^2 + 3x - 1$  determine followings:
- i. Which way the parabola opens?
  - ii. The coordinates of the vertex
  - iii. The roots of the equation

- Q3 Solve the following equations by using (**Gaussian Method**)

$$2x_1 - 2x_2 + x_3 = -2$$

$$x_1 + 4x_2 - x_3 = 5$$

$$x_1 + x_2 + x_3 = 6$$

- Q4 a) Solve the following equations with the help of matrix

$$4x + 3y = 17$$

$$5x + 4y = 22$$

- b) Compute  $(A \times B)^t$  where

$$A = \begin{bmatrix} 2 & 3 & 4 \\ 6 & 1 & 2 \end{bmatrix} \quad B = \begin{bmatrix} 0 & 1 & 3 \\ 4 & 2 & 1 \\ 6 & 2 & 5 \end{bmatrix}$$

- Q5 a) Find the derivative of  $x$   $f(x) = (2 - x - 3x^4)(10 + x - 4x^3)$

- b) Determine the average rate of change in the value of  $y$  in moving from  $x = -1$  to  $x = 2$

$$Y = f(x) = 2x^2 + 6x + 3$$

**END OF EXAM PAPER**