College Name: _____

Seat No: _____ Student's Name: _____

Copy No: _____

KARACHI UNIVERSITY BUSINESS SCHOOL
UNIVERSITY OF KARACHI
FINAL EXAMINATION DECEMBER 2017; AFFILIATED COLLEGES
BASIC MATHEMATICS; BA (BS)-511
BBA – V

Revised Date: January 17, 2018 **Max Time: 1:15 Hrs**
Max Marks: 30

INSTRUCTIONS:

1. **Attempt any 5 questions, all carry equal 06 marks. Do not write anything on the question paper. EXCEPT the 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.**

Q.No.1. The ratio of annual incomes of A and B is 4 : 3 and their annual expenditure is 3 : 2 . If each of them saves 10000 rupees in a year, find their annual income.

Q.No.2. Solve the complex equation and determine the value of *x* and *y*.

$$\frac{(x+yi)}{i} = (7 + 9i)$$

Q.No.3. 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.

Q.No.4. Solve the differential Equation $y\frac{dy}{dx} = x\left(y^4 + 2y^2 + 1\right)$ at $x = -3,\ y = 1$

Q.No.5. 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.

Q.No.6. Determine the maximum and minimum point of the following curve, also draw the graph.

$$f(x) = x^3 - 9x^2 + 15x + 3$$

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Q.No7. 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