Roll No:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Section:\_\_\_\_\_\_

FAST – National University of Computer & Emerging Sciences

(Karachi Campus)

Computer Science Department

***Midterm 1***

Course Code: MT103 CALCULUS-II Date: 18/02/2016

Time Allowed: 01 Hour Spring 2016 Max. Marks: 45

**NOTE: 1) Attempt ALL Questions.**

**2) Return the question paper along with answer sheet.**

Q-1(a) Determine whether the sequence is strictly Increasing or decreasing. [5 marks]

1. 2.

(b) Determine whether the series converges and if so find its sum (any one) [5 marks]

1. 2.

Q-2 Determine whether the series converges or diverges (any three) [15 marks]



Q-3(a) Find the Taylor polynomial of order n = 0,1,2 for the about

and then write nth degree polynomial of function in sigma notation. [5 marks]

Q-4 (a) Find the directional derivative of at P(1,4) in the [8 Marks]

direction of vector

(b) Use appropriate form of chain rule to find

Q-5(a) Let Find [3+4=7 Marks]

(b) Calculate 2nd order partial derivative for