Shivaji College, University of Delhi

B.A. (Programme) Optimization Methods for Economic Analysis

Sem III

Test (2023-24) Max. Marks: 12

Attempt all questions 2nd November, 2023

Duration: 1 hour Faculty Name: Bhumika Bhavnani (Dept. of Economics)

Q-1. Given the function $y = 5x - 2$ (2)

(a) Find the difference quotient $\frac{\Delta y}{\Delta x}$

Q-2. Find the limit of the following function as v approaches 7:

$$q = \frac{v^2 + v - 56}{v - 7}, \quad (v \neq 7)$$ (3)

Q-3. Solve the following inequalities: (4)

(a) $|x+1| < 6$

(b) $|4 - 3x| < 2$

Q-4. Taking the set of all finite real numbers as the domain of the function $q = g(v) = v^2 - 7v - 3$:

(a) Find the limit of q as v tends to N (a finite real number).

(b) Check whether this limit is equal to $g(N)$.

(c) Check whether the function is continuous at N. (3)

Bhumika