National University
of Computer & Emerging Sciences

Program: BS(CS & AI)
Semester: Spring 2024
Course: Multivariable Calculus(MT1008)

Examination: Assignment # 1
Total Marks: 10, Weightage: 03
Date of Submission: 16-02-24

Note: Attempt all questions and write a neat and clean solution.

Q.1. Show that the line $\frac{x-1}{4} = \frac{y-5}{-4} = \frac{z+1}{5}$ passes through the point $(-11, 17, -16)$.

. . . . . .

Q.2. Determine whether the points P_1, P_2, and P_3 lie on the same line.

$$P_1(6, 9, 7), P_2(9, 2, 0), P_3(0, -5, -3)$$

[Hint: P_1, P_2 and P_3 will be on the same line iff $\overrightarrow{P_1P_2} \,||\, \overrightarrow{P_2P_3}$]

. . . . . .

Q.3. Find the intersection of the line $x = -2$, $y = 4 + 2t$, $z = -3 + t$ with the xz-plane.

. . . . . .

Q.4. Find equation of the plane that passes through the line of intersection of the planes $x - z = 1$ and $y + 2z = 3$ and is perpendicular to the plane $x + y - 2z = 1$.

. . . . . .

Q.5. Find an equation of the plane with x-intercept a, y-intercept b, and z-intercept c.

The End