



Daffodil International University
Department of Electrical and Electronic Engineering
Faculty of Engineering
Midterm Examination, Fall – 2026

Course Code: 0541-131
Section: A, B
Full Marks: 25

Course Title: Coordinate Geometry and Vector Analysis
Level-Term: L1-T3
Exam Date: 28th October, 2026
Teacher's Initial: IJM
Time: 1.5 Hours

*** Answer all the following questions sequentially.

[The second right most column indicates the course outcomes (COs) with respective Bloom's level and the right most column indicates the allocated marks.]

			Marks
Q1.	(a) Describe the relation between 3-D system.	CO-1 (C2)	[02]
	(b) Convert the following cylindrical coordinates $(4\sqrt{3}, 45^\circ, 60^\circ)$ into rectangular coordinates.	CO-1 (C2)	[02]
Q2.	(a) Explain homogeneous equation and Demonstrate the equation of the bisectors of an angle produced by the pair of straight line represented by the equation $8x^2 - 42xy - 11y^2 = 0$ at origin.	CO-1 (C2)	[03]
	(b) Interpret the equation to the standard form $32x^2 + 52xy - 7y^2 - 64x - 52y - 148 = 0$	CO-1 (C3)	[05]
Q3.	(a) Remove the first degree term in $2x^2 + 5y^2 - 12x + 10y - 7 = 0$.	CO-1 (C2)	[03]
	(b) Determine the equation of the Parabola $x^2 - 2xy + y^2 + 2x - 4y + 3 = 0$ after rotating of axes through 45° .		[03]
Q4.	(a) Interpret the equation of the plane passing through the lines of intersection of the plane $2x - y = 0$ and $3z - y = 0$ and perpendicular to the plane $4x + 5y - 3z + 1 = 0$.	CO-1 (C2)	[03]
	(b) Illustrate the equation of the plane which is parallel to the plane $4x - 4y + 7z - 3 = 0$ and distance 4 units from the points $(3, 1, -2)$.		[04]