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Daffodil International University
Faculty of Science & Information Technology
Department of Multimedia and Creative Technology (MCT)
Mid Term Examination, Spring 2026
Course Code: 0541-111
Course Title: Mathematics-1

Time: 1:30 Hrs **Marks: 25**

Answer ALL Questions

1.	A, B, C, D- are four points and their coordinates are (-4, 1), (-4, -8), (-7, -4), (-1, -4) accordingly. Line AB divides line CD. Determine the ratio of the division. Also calculate the coordinate of that point where the intersection between AB and CD line takes place.	[5 + 2 = 7]	CLO 2, C4
2.	Point (t, -4) is at the same distance from point (3, -1) and Y'-axis (negative pole). Determine the value of t. After the mathematical breakdown, a proof through graphical representation is must. You need to use a hand-drawn Cartesian plane for this purpose. All major axis and the origin must be indicated clearly.	[3 + 2 = 5]	CLO 2, C4
3.	For what value(s) of t will the three points- $P_1(t,\ 3t-2),\quad P_2(4,\ 10),\quad P_3(2-t,\ 6-t)$ be collinear?	[4]	CLO 2, C4
4.	The ordinate of a point is two times of its abscissa. If the inbetween distance of this point and point (4, 3) is $\sqrt{10}$ unites, then determine the co-ordinate.	[4]	CLO 2, C2
5.	Mr. Lee runs a string of lights from the ground straight up a pole that is 3 meters tall. Then he runs the string in a straight line to a point on the ground that is 8 meters from the base of the pole. This exact pattern of lighting repeats for 3 poles including the first one. There are 30 lights per meter of the string. How many total lights are on the string? Detailed mathematical breakdown and symbolic graphical representation of the scenario is mandatory.	[2 + 1 = 3]	CLO 1, C2
6.	Given m = 20 and n = 5. Use Euclidian formula ($a = m^2-n^2$; $b = 2mn$, $c = m^2+n^2$) to compute a, b, and c. Also verify whether (a, b, c) is a Pythagorean triple or not.	[2]	CLO 1, C4