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Daffodil International University

Department of Computer Science and Engineering
Faculty of Science & Information Technology
Midterm Examination, Fall 2022
Course Code: 223, Course Title: Digital Electronics
Level: 2 Term: 2 Batch: 59

Time: 01:30 Hrs **Marks: 25**

Answer ALL Questions

1.	*a)*	Show the conversion of the following numbering system: i)$(B65F)_{16} = (?)_{10}$ ii) $(1BC.E9)_{16} = (?)_8$	[5]	CO1
2.	*a)*	Solve the following equation into a minimum no. of literals by applying the suitable process $Y = \|AB'(C+BD) + A'B'\|C$	[5]	CO2
	b)	Construct a Logic Circuit from the following function using Universal NOR Gate only. $F = (A+B)(C+D)E$	[4]	
	c)	In Dhaka city robbery in house is common issue. To prevent this you need to design a security system. You will set a sensor to detect any movement, a monitoring device, set a sensor on door to detect vibration. If sensor detect any movement then system will send a SMS to user. If someone tried to brake door then system will send both SMS and Alarm. Monitoring device is always open for monitor. Now design truth table, Boolean expression and circuit of this system.	[6]	
3.	*a)*	Simplify the following equation using four variables mapping: $F = \sum(0,1,2,4,5,8,9,12) + \sum d(6,7,13,14)$	[5]	CO3

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