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Daffodil International University

Faculty of Science & Information Technology

Mid-term Examination, Spring 2023

Course Code: CSE411 Course Title: Computer Architecture and Organization

Level:4 Term:1 Batch:55

Time: 1 Hour and 30 Minutes **Marks: 25**

Answer ALL Questions

[The figures in the right margin indicate the full marks and corresponding course outcomes. All portions of each question must be answered sequentially.]

1.	*a)*	The architectural level model is where the specific sub-system blocks are put in place, with accurate connectivity and behavior. This model may be more or less abstract, but correlates directly to hardware to be built with different components such as secondary storage, NAND gate, adder, system bus, counter etc. Now, classify the above components according to their design level with their respective functions.	[5]	CO1
	b)	What are the differences between human brain and microprocessor. Explain in brief. Also identify the steps required to handle the interrupt service requests by the processor.	[4]	
2.	*a)*	Demonstrate the 0-operand and 1-operand instruction sequences for the following operation: $d \leftarrow a * b + c$ Assume that all data are in registers.	[4]	CO2
	b)	Software compatibility is a characteristic of software components or systems which can operate satisfactorily together on the same computer, or on different computers linked by a computer network. Now, give the structure of that system which introduced this characteristic in evolution of computers.	[3]	
3.	*a)*	Suppose, you are a varsity student bearing ID: 1BEFF, as you have got it according to your admission serial number and your school friend has got the next serial number and your college friend has been admitted immediately after your school friend in your university. Now, analyzing the above scenario write your college friends ID number like you have and represent that ID into negative binary number.	[5]	CO3
	b)	Suppose, you have a data to store in computer memory. Now, apply little-endian and big-endian addressing techniques for the following instruction: Store 5892367H, B01F9FH Here, Hexadecimal Number is 5892367 and Address is B01F9F	[4]	