



Daffodil International University
Faculty of Science & Information Technology
Department of Software Engineering
Course Code: SE222, Course Title: Computer Architecture
Quiz-1 (Fall 2026) Section: 46 L Marks: 15

Student ID :

1. A program executes the following instruction mix on a 2 processor -

Instruction Type	CPI	Instruction Mix
Integer arithmetic	3	30%
Load	4	40%
Store	5	10%
Branch	1	20%

a) **Compute** the average CPI of the processor using the given instruction mix. **(3 marks)**

b) If the program has 20,000 store instructions, **compute** the instruction count and MIPS of the program, if the execution time is 200ns. **(3 marks)**

2. Rahim and Tanvir designed processors with different transistor growth rates. Rahim's processor doubles its transistor count every 2 years, while Tanvir's processor doubles its transistor count every 3 years. In 2026, Rahim's processor has 500 million transistors, while Tanvir's processor has 1,000 million transistors. **Estimate** the year in which their predicted transistor counts become equal and determine the transistor count of each processor in that year. **(5 marks)**

3. **Explain** the four major steps involved in the execution of an instruction in a processor. **(4 marks)**