COMP311 Extra Practice 3 Name: _____

Question 1: Register File Decode Your team has intercepted five encoded transmissions. Intelligence confirms each is a RISC-V R-type instruction. Before the transmission ended, your team also received a register file with its 32 registers filled with values and a garbled voice stating the secret message spans from register `x10`–`x19`.

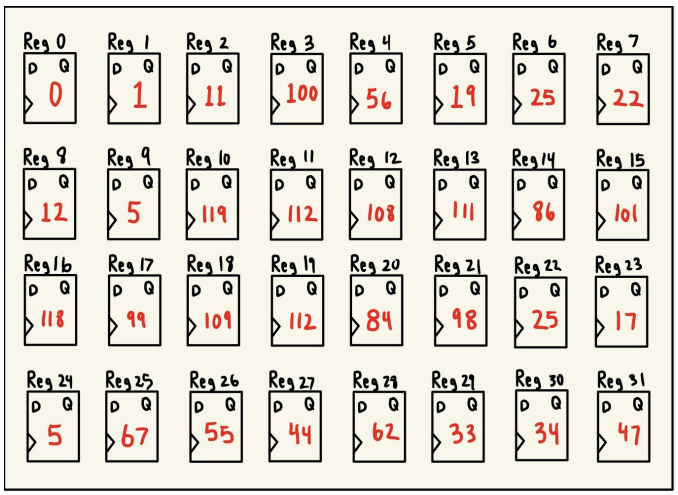
Part I: Decoding the Message

Here are the 5 messages:

Label	Transmission
MSG-0	`0000000 01001 00001 001 00100 0110011`
MSG-1	`0100000 00010 01011 000 01011 0110011`
MSG-2	`0000000 00100 01110 100 01110 0110011`
MSG-3	`0100000 00101 10000 000 10000 0110011`
MSG-4	`0000000 01000 10001 000 10001 0110011`

1.1. Decode each 32-bit transmission into a RISC-V R-type instruction.

Question 2: Register File Execute Good job Agent. Now, using the instructions you decoded from the transmissions, execute these instructions **in order** on the register file below.



2.1. Write the resulting values in registers `x10`–`x19` after execution.

2.2. Take the values from the register file and decode each using an ASCII table. Write the secret message below.

To get more practice with assembly writing, check out the **RISC-V Assembly Practice** on the course website here: `https://github.com/kakiryan/comp-311-assembly-practice-problems`!