Assignment for Week 8

The due date for submitting this assignment has passed. Due on 2019-03-27, 23:59 IST.
As per our records you have not submitted this assignment.

1) Which of the following is FALSE? 1 point

- In micro-programmed control unit, the logic of the control unit is specified by a code
- The hardware control unit is a Finite State Machine based controller
- Hardware control unit is faster in execution compared to micro-programmed control unit.
- None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
None of the above

2) Given below is the FSM for the hardwired control unit for instruction JMPZ M (Jumps conditionally "if zero flag is set" to the instruction in memory location M i.e., update the value of PC to M). Which of the options given below appropriately labels the transition from S3 to S5 (marked as -------- in the figure).

- If Zero Flag!=0/ END=1

T, Zero Flag/ Offset-field of IR,=1, Select=1, Add=1, Z,=1
T, MFC, Z,=1, PC,=1, V,=1
T, MDR,=1, IR,=1

T, PC,=1, MAR,=1, Read=1, Select=0, Add=1, Z,=1
3) Given below is the block diagram of organization of Micro-programmed Control Unit. Which of the options given below appropriately describe the blocks marked “X---” and “Y--”?

- X is “Condition Select” and X is “Multiplexer”
- X is “Program Counter” and X is “ALU”
- X is “Address Lines” and X is “General Purpose Register”
- X is “Micro Program Counter” and Y is “Control Memory”

No, the answer is incorrect.
Score: 0

Accepted Answers:
X is “Micro Program Counter” and Y is “Control Memory”

4) Which of the following statement is TRUE about Horizontal microprogram?

- Less micro-instructions enabling parallelism
- No encoding leading to higher speed
- Wide control function field
- All of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
All of the above

5) Given below is the FSM for the hardwired control unit for instruction “ADD R1, M” (where, M is a memory location) i.e., Add the content of Memory Location M to the content of Register R1 and store the final result in R1. Which of the options given below appropriately labels the transition from S6 to S7 (marked as ------ in the figure).
In the microprogrammed control unit, as shown below, let

1. PCout, MARin, Read, Select=0, Add, Zin
2. Zout, PCin, WMFC
3. MDRout, IRin

be the control signals required to fetch an instruction. Assume that Control Function field is 16 bits, Condition Select is 2 bits and Branch address filed is 2 bits. What would be the values in the condition select field in all the above three control steps?

No, the answer is incorrect.
Score: 0
Accepted Answers:
R1out=1, Zin=1

6) In the microprogrammed control unit, as shown below, let

1. PCout, MARin, Read, Select=0, Add, Zin
2. Zout, PCin, WMFC
3. MDRout, IRin

be the control signals required to fetch an instruction. Assume that Control Function field is 16 bits, Condition Select is 2 bits and Branch address filed is 2 bits. What would be the values in the condition select field in all the above three control steps?
7) After the three control steps specified in the above question, the MPC is incremented to point to the word in the control memory that corresponds to t4, which corresponds to decoding the instruction.

- 01
- 00
- 10
- 11

No, the answer is incorrect.
Score: 0
Accepted Answers: 11

1 point

8) After the three control steps specified in the above question, the MPC is incremented to point to the word in the control memory that corresponds to t4, which corresponds to fetching the instruction.

- 01
- 00
- 10
- 11

No, the answer is incorrect.
Score: 0
Accepted Answers: None of the above

1 point