

The LNMIIT
Microprocessor and Interface
ECE331-MICRO1
End Semester Exam

Note: 1. Manage the time properly.

2. Use keywords rather than giving general descriptions.

3. Draw diagrams, flowcharts, etc. wherever required.

Marks: 100

Time: 3 hours

Date: 28/11/2018

Q1. Explain the following with the help of examples 10

- a) Status Manipulation Instructions
- b) Program manipulation Instructions
- c) Miscellaneous Instructions

Q2. Draw the timing Diagram of the following Instruction 20

- a) JP 8550 (*consider both states*) *true false*
- b) CNZ 9001 (if true)
- c) STAX rp
- d) DAA

Q3. Draw the state transition diagram and explain 15

- a) HOLD and HLDA signals
- b) T_{hold} , T_{wait} and T_{reset}
- c) Interrupt handling
- d) HALT

Q4. How to eliminate the speed related incompatibilities, explain it with the help of read access and write access diagrams. 10

Q5. Explain the following: 20

- a) 16 x 2 LCD display and 7 segment
- b) 8253 *PST*
- c) 8259 *PIC*
- d) Application of Addressing modes and Relative addressing

Q6. Draw and explain: 15

- a) Mode 1 of 8255 *PST*
- b) Mode 2 of 8255
- c) DMA based Data Transfer
- d) Software and hardware polling

Q7. Explain the Hardware interrupt with the help of a diagram. Also discuss how microprocessor executes hardware and software interrupts. 10