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 Department of Computer Science and Engineering  
 B.Sc. (Engineering) in CSE  
 Semester Final Examination 2018 (Jan-Jun)  
 Level 4 Semester I, Course Code: CSE 405, Credit: 2.0  
 Course Title: Computer Interfacing



Time: 2 Hours

Full Marks: 60

*[N.B. The figure in the right margin indicates the marks for respective question and split answer of any question is unacceptable.]*

**Section-A**

**Answer any 3 (three) questions**

1. (a) What is I/O interface? Describe the I/O commands used in I/O control bus. 1+2  
 (b) Compare fixed and variable port addressing. 2  
 (c) What is the basic input interface? Explain with an example. 5
  
2. (a) Define programmable peripheral interface. Describe the status of the pins of 82C55 PPI that is used to I/O ports assignment. 1+2  
 (b) Describe mode 2 bidirectional operation of 82C55 PPI with internal structure and timing diagram. 5  
 (c) What should be the value to be loaded in the command register to make port A an input port and port B as output port in mode 0. 2
  
3. (a) Explain the term handshaking as it applies to computer I/O systems. 2  
 (b) What is stepper motor? Describe various types of stepper motor. 1+3  
 (c) Show the interfacing diagram of a 4-step stepper motor with microprocessor. Also show the 4-step sequence binary pattern. 2+2
  
4. (a) What is bar code? Describe the principle of barcode reading. 1+3  
 (b) Describe the read only pins of a parallel printer interface. 4  
 (c) What is the need of a regulator in power supply unit? 2



**Section-B**

**Answer any 3 (three) questions**

1. (a) How the reset of 8251 can be done? 2  
(b) Describe the mode instruction format of 8251 for asynchronous mode. 3  
(c) Explain the mechanism in 8251 for identifying the command in the control port with figure. 5
  
2. (a) What is expansion bus? Compare ISA and PCI expansion buses. 1+2  
(b) Describe the requirements to fully implement Plug and Play (PnP). 3  
(c) What happens during the address phase of a PCI burst transfer? 4
  
3. (a) What is understood by bus arbitration in PCI bus system? 2  
(b) What is sound card? Describe the major components of a sound card. 1+2  
(c) Describe the basic structure of an embedded system. 5
  
4. (a) What are the functions performed by the IN and OUT instructions? 1  
(b) Develop the interface of a 3×4 phone style keyboard to the microprocessor through 82C55 PPI. What will be the input and output port value if key-5 is pressed? 2+1  
(c) Show the flowchart for getting meaningful data from a keyboard and explain the major stages. 2+4