Set A

BRAC UNIVERSITY
Department of Computer Science and Engineering

Examination: Online Midterm | Semester: Fall 2023
Duration: 1 Hour and 45 Minutes | Full Marks: 24

CSE 360: Computer Interfacing

Answer All 4 following Questions.
Figures in the right margin indicate marks. [Each Question carries 6 Marks]

Name: ID: Section:

1. CO1 a) For parallel ports, the speed ranges from 50 to 150 kbps. **Name** the two modes that can be used to reach speeds of up to 2 Mbps using the same port. **1**

b) **Explain** how glitches and wait states can cause bus conflict. **1.5**

c) **State** the purpose of Calibration Circuit and Driver in Hardware Interfacing. **1.5**

d) **Explain** the difference between Firewire port and Ethernet port in their working mechanisms and usage. **2**

2. CO3 Suppose a USB pendrive is connected to the 82C55 IC. Consider this true for all 3 questions. In the first hour the user copies a file from the pendrive to the PC and in the second hour the user copies a file to the pendrive from the PC.

a) **Explain** the handshaking process that will take place in the first hour. Write the steps sequentially mentioning the signals and ports as required. **Illustrate** a timing diagram to support your argument. **3**

b) **Write** the control bits/control word to configure the 82C55 IC for the following scenarios: **2**

i. IC82C55 connected with a pendrive and 11 switches

ii. IC82C55 connected with a pendrive and one 7 segment display

c) What will be the major difference with the configuration of question b (i), if we want to connect a Monitor to the 82C55 instead of 11 switches? (Write briefly, no need to elaborate) **1**

3. CO4 Suppose you're designing a project where you want to show the current date with the message 'Have a Good day'

a) Which display device fits the description of the scenario mentioned above? **Mention** why any other display device is not suitable for the scenario. **1**

b) **Explain** the significance of the data register in 4 bit mode. **1.5**

c) **Explain** the step by step process of how the microprocessor would send the data to the display device and the mechanism of the device to display the message. (Hint: You must explain the working principle of the display device mentioning the necessary components and registers to display the statement) **2.5**

d) **State** your understanding of software key debouncing. **1**

4. CO4 Suppose you want to show your student ID over multiple Seven Segment Displays.

a) **Mention** the number of Seven Segment Displays needed to display your own Student ID and the reason for that. **1**

b) If you interface the 7-segment displays through IC82C55, **Write** the numbers of I/O pins needed in total for interfacing. **1**

c) **Explain** how you would interface the seven segment displays with IC 82C55 using the Common Anode method with the full process. (Use a diagram and table to support your answer, you must use your student ID as an example to differentiate your answers with the others) **4**