



Daffodil International University
Department of Computer Science and Engineering
Faculty of Science and Information Technology

Midterm Examination, Semester: Fall 2017

Course Code: CSE423 Course Title: Embedded Systems

Section: All Course Teacher Initial: AA, FF, MIH, MJA, AFI

Time: 90 minutes

Full Marks: 25

1. Let's consider you have the following parts available:

[8]

- i) One LM35 Temperature sensor
- ii) Arduino Uno Board
- iii) A Uni-Directional Motor
- iv) Couple of jumper cable
- & v) USB Cable to connect the Uno Board

Now, write a Sketch that turns **ON** the Motor if the temperature sensor reading exceeds 35 Degrees. If you can't fix the values due to quantization issues- Keep in mind that it is required that the Motor must be **ON** when the temperature is 35 degree or above and it will remain off at any lower temperature than necessary to meet that requirement. [You should sample the sensor about thrice a second]

2. Let's say, you are planning to work with Home Automation System based on PIR Sensor on the LAB. But you found that, some of the PIR Sensors are damaged. As your deadline is very near, you need to do something instantly so that at least you can make a prototype from the available apparatus of LAB (Try to use any component which was already used while doing the lab). Justify your answer for the above mentioned scenario by writing necessary sketch along with possible circuit diagram which can be used as an alternative of PIR Sensor.

[7]

3. What is embedded system? Describe the benefit of micro-processor in details. [2+4]

4. Write a simple sketch to print anything on serial monitor if any character is available as Input. [4]

----- ☺ Good Luck ☺ -----