Roll No. | | | | | | | | | | |

ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. /B.Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS, APR / MAY 2025

ELECTRONICS AND INSTRUMENTATION ENGINEERING
IV Semester
EE23S01 & Sensor Interfacing Skills
(Regulation 2023)

Time: 1.5 hrs. Max. Marks: 50

PART- A (10x3 =30 Marks)
(Answer all Questions)

Q. No.	Questions	Marks
1	Draw a circuit to connect an LDR to Arduino Uno for light sensing.	3
2	What is the difference between analog and digital sensors? Give two examples of each.	3
3	Compare UART and SPI Protocols	3
4	Write an Arduino code to interface an infrared (IR) sensor with the microcontroller?	3
5	Write an Arduino code to Blink a Light Emitting Diode (LED) connected to digital pin 3.	3
6	What is meant by Light Emitting Diode (LED)?	3
7	Write a few words about I2C communication protocols?	3
8	List out different types of sensors and its application	3
9	Discuss the working principle of ultrasonic sensor?	3
10	Write a code to make a fire alarm where a buzzer sounds if the flame sensor detects fire.	3

PART- B (5 x 4 = 20 Marks)
(Answer any 4 Questions)

Q. No.	Questions	Marks
1	Explain the difference between a microcontroller and a microprocessor. List any two uses of a microcontroller.	5
2	What is Pulse Width Modulation (PWM)? Explain its role in brightness control of an LED.	5
3	Find time duration for a battery that can run a Motor Battery spec - 48v 54378mAh Motor spec - 48v 96 watts	5
4	What challenges can arise while connecting multiple modules (e.g., LCD, LDR, IR) to a microcontroller? How can they be resolved?	5

5	Describe the working principle of an Infrared (IR) sensor and list two real-life applications.	5
6	An ultrasonic sensor was triggered at a point of time - 13 seconds and echo was received at a point of time - 325 seconds. Find distance	5