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Bengaluru

Mid Term Examinations - October 2026

Date: 05/10/2026 **Time:** 11:45 AM - 01:15 PM

Course Code: CIT3403 **Course Name:** Embedded Systems for IoT

Semester: Sixth Semester **Max. Marks:** 50 **Weightage:** 50%

CO - Levels	CO1	CO2
Marks	46	44

PART A: Answer Following Questions. 10 M

Q.N.	Questions	M	CO	BT
1	Describe the significance of addressing modes in assembly language programming.	2	CO1	BT2
2	Differentiate between parallel and serial communication in terms of data transfer.	2	CO1	BT2
3	Describe the role of functions and data types in Embedded C programming.	2	CO1	BT2
4	Describe the purpose of the Arduino IDE in the development of an Arduino-based application.	2	CO2	BT2
5	Differentiate between digital input/output and analog input in Arduino programming.	2	CO2	BT2

PART B : Answer Any 1 Following Questions. 10 M

Q.N.	Questions	M	CO	BT
6	Describe the structure of an assembly language program and discuss the commonly used addressing modes with suitable examples.	10	CO1	BT2
7	Illustrate the working of parallel port programming in a microcontroller and describe how digital input and output devices can be interfaced through an I/O port.	10	CO1	BT2

PART C: Answer Any 1 Following Questions. 10 M

Q.N.	Questions	M	CO	BT
8	Describe the Arduino development toolchain and explain the major steps involved in writing, compiling, uploading, and debugging an Arduino sketch.	10	CO2	BT2
9	Illustrate the use of digital I/O, analog input, and PWM output in Arduino programming with suitable application examples.	10	CO2	BT2

PART D: Answer Any 1 Following Questions. 10 M

Q.N.	Questions	M	CO	BT
10	Summarize the principles of UART-based serial communication and describe the sequence of data transmission and reception through a microcontroller's serial port.	10	CO1	BT2

11	Describe the role of Embedded C in microcontroller programming and discuss how variables, data types, functions, and control statements are used to structure an embedded program.	10	CO1	BT2

PART E: Answer Any 1 Following Questions. 10 M				
Q.N.	**Questions**	**M**	**CO**	**BT**
12	Illustrate how Arduino can be used to develop a temperature-based automatic fan control system. Describe the interfacing of the temperature sensor and fan, the sequence of operation, and the role of the Arduino program.	10	CO2	BT2
13	Summarize the different types of Arduino shields and illustrate their role in extending the capabilities of an Arduino-based IoT system.	10	CO2	BT2