Roll No.												

PRESIDENCY UNIVERSITY

BENGALURU

Mid - Term Examinations – October 2025

Date: 08-10-2025 **Time:** 11.45am to 01.15pm

School: SOE	**Program:** B Tech	
Course Code : ECE3175	**Course Name:** Embedded Systems	
Semester: V	**Max Marks**:50	**Weightage**: 25%

CO - Levels	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**
Marks	**24**	**26**			

Instructions:

(i) Read all questions carefully and answer accordingly.

(ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks. **5Q x 2M=10M**

1	Stack Pointer is used to hold the address of stack. What is banked Stack Pointer	**2 Marks**	**L2**	**CO2**
2	Cortex M series has many processors working in different modes. Which are the operating modes for Cortex M4 processor	**2 Marks**	**L2**	**CO2**
3	Differentiate between Little Endian and Big Endian machines	**2 Marks**	**L2**	**CO2**
4	Name some the serial peripheral interfaces in Embedded system	**2 Marks**	**L1**	**CO2**
5	Differentiate between just an Embedded System and Embedded system in real time	**2 Marks**	**L1**	**CO2**

Part B

Answer the Questions. **Total Marks 40M**

6.	**a.**	Interrupts calls made by the internal or externa peripherals. Explain the functions of an Interrupt Controller in and embedded System	**10 Marks**	**L2**	**CO1**
	b.	Most of the electronic gadgets are based on embedded processors. Explain the fundamental characteristics of an embedded system with suitable examples.	**10 Marks**	**L2**	**CO1**
		Or			
7.	**a.**	Memory stores data. They are different types of memory devices. Identify the differences between DRAM and SRAM	**10 Marks**	**L2**	**CO1**
	b.	Need of the computing systems if different in different applications. What are the differences between Embedded Systems Vs General-Purpose Computing?	**10 Marks**	**L2**	**CO1**

8.	**a.**	Write an Assembly Program add two 32 bit numbers and store in the memory named RESULT.	**10 Marks**	**L3**	**CO2**
	b.	ARM Cortex M processor are a family of strong processors. Draw the Block Diagram of ARM Cortex M4 processors and briefly explain	**10 Marks**	**L2**	**CO2**
		Or			
9.	**a.**	With the help of a neat figure, analyze the programmer's model of the ARM Cortex-M4 processor by contrasting the roles of different registers and their impact on program execution.	**10 Marks**	**L4**	**CO2**
	b.	Analyze the ARM processor family with a neat figure to show how the Cortex-A, Cortex-R, and Cortex-M series differ in their characteristics and applications	**10 Marks**	**L4**	**CO2**