Question Paper

Exam Date & Time: 01-Jul-2022 (02:00 PM - 05:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

MANIPAL SCHOOL OF INFORMATION SCIENCES, MANIPAL
SECOND SEMESTER MASTER OF ENGINEERING - ME(EMBEDDED SYSTEMS) DEGREE EXAMINATION - JUNE 2022

Embedded Systems [ESD 5202]

Marks: 100   **Duration: 180 mins.**

Friday, July 1, 2022

Answer all the questions.

1)	With a neat diagram, explain the difference between Microprocessor and Microcontroller (TLO1.1) (10 Marks)	(10)
2)	With a neat diagram, explain the interfacing of LED with ARM cortex Microcontroller (LPC13/17). (TLO2.2) (10 Marks)	(10)
3)	With a neat diagram, explain the interfacing of 7-segment display with ARM Cortex Microcontroller. (TLO2.2) (10 Marks)	(10)
4)	Explain TIMER programming for LPC13xx/LPC17xx with neat examples. (TLO3.2) (10 Marks)	(10)
5)	With a simplified view of CORTEX-M3 block diagram, explain the block and features. (TLO2.1) (10 Marks)	(10)
6)	Explain with neat diagram, the switching between the ARM and Thumb mode in ARM 7 and how it overhead is tackled in CORTEX-M3. (TLO1.2) (10 Marks)	(10)
7)	Explain the CMSIS-Core structure with a neat diagram. (TLO1.2) (10 Marks)	(10)
8)	With a neat example, explain the task creation (without parameters) in FREERTOS (TLO5.1) (10 Marks)	(10)
9)	With a neat diagram, explain the USB enumeration process. (TLO4.1) (10 Marks)	(10)
10)	With a neat diagram, explain the features of CAN protocol. (TLO4.1) (10 Marks)	(10)

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