

# Question Paper

Exam Date & Time: 17-Feb-2021 (10:00 AM - 01:15 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

MANIPAL SCHOOL OF INFORMATION SCIENCES, MANIPAL  
FIRST SEMESTER MASTER OF ENGINEERING - ME (EMBEDDED SYSTEMS) DEGREE EXAMINATION - FEBRUARY  
2021

Microcontrollers and its Applications [ESD 602]

Marks: 100

Duration: 180 mins.

WEDNESDAY, FEBRUARY 17, 2021

Answer all the questions.

- 1) Explain the architecture of 8051 with the help of a block diagram. [TLO 1.2] (10)
- 2) Write short notes w.r.to 8051 (5+5) [TLO1.2] (10)
  - (i). Interrupt Vs. Polling
  - (ii). Level and Edge Triggered Interrupt
- 3) Briefly explain with suitable diagram of various processor modes and functionalities of ARM7 [TLO1.2] (10)
- 4) Write a note on ARM philosophy, difference between RISC and CISC machines[ TLO1.1] (10)
- 5) Write a C and ASM program that continuously gets 8-bit data from P0 and sends it to P1 while simultaneously creating a square wave of 200 us period on Pin 2.1. Use timer 0 to create the square wave. Assume XTAL=11.0592 MHz of 8051[TLO3.1] (10)
- 6) Explain the role of crystal oscillator and reset circuitry of LPC 2148 [ TLO2.1] (10)
- 7) Define operation clock signal of SPI and multi-slave configuration with suitable diagram. [TLO3.2] (10)
- 8) Describe the roll of PLL in LPC 2148 with suitable diagram with configuring the respective registers for operation.[TLO3.2] (10)
- 9) Explain the UART programing on LPC 2148 with suitable register configuration. [TLO3.2] (10)
- 10) Explain how microcontroller can be interfaced with Stepper Motor. [TLO 2.1] (10)

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