

Question Paper

Exam Date & Time: 04-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 (AUTOMOTIVE EMBEDDED SYSTEMS) DEGREE EXAMINATION -
FEBRUARY 2021

Embedded Systems [ESD 605]

Marks: 100

Duration: 180 mins.

THURSDAY, FEBRUARY 4, 2021

Answer all the questions.

- 1) With a neat diagram, list the difference between VON-Neumann and Harvard architecture. TLO-1.1 (10)
- 2) With a neat diagram, briefly explain the architecture of ARM TLO-2.1 (10)
- 3) What is code density? What does it help in ARM processor to improve code density? TLO-2.1 (10)
- 4) With a neat diagram, explain the alignment of data and the supported data types from ARM. TLO-2.2 (10)
- 5) With a neat diagram, explain the blocks and features of LPC microcontroller. TLO-2.2 (10)
- 6) With a neat diagram, explain the generation of 1Khz delay with TIMER0 of LPC controller. TLO-2.2 (10)
- 7) With a neat diagram, explain the application to blink an LED with a delay of 1 MHz delay with TIMER0 of LPC controller. TLO-2.2 (10)
- 8) With a neat diagram, explain the SPI protocol working with CONTROLLER aspects. TLO -3.1 (10)
- 9) With a neat diagram, explain the errors in CAN protocol. TLO-3.2 (10)
- 10) Explain the features of FREE RTOS? TLO-4.1 (10)

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