

Code: 19EC3601

III B.Tech - II Semester – Regular Examinations – JUNE 2022**MICROPROCESSORS AND MICROCONTROLLERS
(ELECTRONICS & COMMUNICATION ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

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- Note: 1. This question paper contains two Parts A and B.
2. Part-A contains 5 short answer questions. Each Question carries 2 Marks.
3. Part-B contains 5 essay questions with an internal choice from each unit. Each question carries 12 marks.
4. All parts of Question paper must be answered in one place.
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PART – A

1. a) Explain the conditional flags of 8086.
b) What is the purpose of CLD and STD in string manipulations?
c) Why Interrupt latency will occur?
d) Distinguish between LDR & STR memory access instructions.
e) Describe the size of RAM and flash memories are integrated in TM4C 123.

PART – B**UNIT – I**

2. a) Explain the maximum mode pins of 8086 microprocessor. 6 M
b) Draw the read and write timing diagram in maximum mode configuration of 8086 microprocessor. 6 M

OR

3. a) Discuss about the Interrupts and interrupt response. 6 M
b) Explain how the pipelined architecture is implemented in 8086. 6 M

UNIT – II

4. a) What is an addressing mode? Explain various addressing modes of 8086 along with examples. 6 M
b) Write an ALP to perform multi-byte addition. 6 M

OR

5. a) Explain any four assembler directives of 8086 with suitable examples. 6 M
b) Write an ALP to separate odd and even numbers. 6 M

UNIT-III

6. a) Summarize the architectural features of ARM Cortex-M based microcontroller with neat block diagram. 6 M
b) Describe the Handling of Exceptions or Interrupts-exception EXIT or Return with example. 6 M

OR

7. a) Explain in detail about setting-up interrupt vector table. 6 M
b) Identify the Register set in Processor operating modes. 6 M

UNIT – IV

8. a) Choose the instruction set of ARM Cortex-M3 based on functionality for performing integer operations. 6 M
b) Contrast between conditional and unconditional branch instructions. 6 M

OR

9. a) Develop an assembly language program to calculate the sum of first five even numbers. 6 M
- b) Briefly explain the Data Processing Instructions with relevant examples in Cortex-M. 6 M

UNIT – V

10. a) Write the steps involved in GPIO configuration. 6 M
- b) Develop assembly language program to display the Hex digits 0 to F on a 7-segment LED interface with an appropriate delay in between. 6 M

OR

11. a) Illustrate the Interfacing an LCD module. 6 M
- b) What is the difference between SysTick and timer? Describe the TM4C 123 timing interfacing. 6 M