

R18

Code No: 156BU

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, January/February - 2025

MICROPROCESSORS AND MICROCONTROLLERS

(Common to EEE, MCT)

Time: 3 Hours

Max. Marks: 75

Note: i) Question paper consists of Part A, Part B.

ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.

iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A

(25 Marks)

- 1.a) What is the purpose of ALE and DEN signals in 8086? [2]
- b) What is assembler? Explain the programming with assembler. [3]
- c) Give 8051 instruction format. [2]
- d) Write the bit definition for PCON register. [3]
- e) Write about BSR mode. [2]
- f) Write note on dynamic RAM interfacing. [3]
- g) Explain the concept of memory paging. [2]
- h) Differentiate RISC and CISC processors. [3]
- i) List the various CORTEX Processor models. [2]
- j) Mention external interfaces on Cortex processor. [3]

PART – B

(50 Marks)

- 2.a) How many address lines does an 8086 have and explain about multiplexed address lines?
- b) List the various registers of 8086. Draw the flag register and explain each flag of it. [5+5]

OR

- 3.a) Write short note on any two Assembler Directives:
i) DB ii) DD iii) EQU.
- b) Develop an assembly language program to find the sum of numbers from 1 to 100. [5+5]

- 4.a) Discuss about 8051 series microcontrollers in expanding the memory.
- b) What are the interrupts of 8051? Explain them briefly. [5+5]

OR

- 5.a) Compare the microprocessor and microcontroller in all aspects.
- b) Explain the different types of timers in 8051. [5+5]

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6.a) With the help of a neat diagram show the interfacing of LCD Display with 8051 and explain its operation.

b) Describe key bouncing problem and de-bouncing solutions. [5+5]

OR

7.a) What is external communication interfaces? Explain them with suitable diagrams.

b) How does 8051 differentiate between the internal and external program memory. [5+5]

8.a) Explain about data flow model of ARM processor.

b) List various interrupt handling schemes ARM processors and explain any one. [5+5]

OR

9.a) Explain about the CPSR register of ARM processor.

b) Write the significance of Thumb instruction and compare ARM and thumb instruction. [5+5]

10. Explain with a neat diagram about the architecture of OMAP Processor. [10]

OR

11.a) Write the memory access of OMAP Processor.

b) Mention the features of CORTEX processor. [5+5]

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