

**CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS**

**III-B.TECH-II-Semester End Examinations (Regular) - May- 2023
MICRO PROCESSORS, MICRO CONTROLLERS AND INTERFACING
(CSM)**

[Time: 3 Hours]

[Max. Marks: 70]

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 20 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A**(20 Marks)**

1. a) Name the functional units of 8086 microprocessor. [2M]
- b) List the various interrupts supported by the 8086. [2M]
- c) Mention the list of branch and call instructions of 8086. [2M]
- d) Define macro with example. [2M]
- e) What are the serial communications interrupts of 8051 microcontroller? [2M]
- f) List the various applications of 8051 microcontroller. [2M]
- g) Give the RS 232 Standard details. [2M]
- h) Explain half duplex and full duplex communication with example. [2M]
- i) Define interrupt vector table. [2M]
- j) Show the pipelined instruction sequence of ARM. [2M]

PART-B**(50 Marks)**

- 2.a) Describe how the registers are organized in 8086 microprocessor? [5M]
 - b) Discuss the maximum mode pin configuration of 8086 with a neat diagram. [5M]
- OR**
3. Draw and explain the architectural diagram of 8086 microprocessor. [10M]
- 4.a) With suitable examples discuss any five assembler directives of 8086. [5M]
 - b) Outline the instruction set of 8086 in detail. [5M]
- OR**
5. a) Develop an assembly language program to multiply two 16-bit numbers to give 32-bit result. [5M]
 - b) List the string manipulation instruction set of 8086 microprocessor with examples. [5M]
- 6.a) Explain the concept of memory organization of 8051 microcontroller. [5M]
 - b) Analyze the programming timer interrupts of 8051. [5M]
- OR**
- 7.a) Draw the internal architecture of 8051 Microcontroller and explain its operation. [5M]
 - b) Illustrate the concept of timers and counter of 8051 microcontroller. [5M]
8. Write a note on the following: [10M]
 - i. I²C Bus
 - ii. SPI Bus
- OR**
- 9.a) Draw the interfacing diagram of D/A convertor with 8051 and explain its operation. [5M]
 - b) Draw the internal circuit diagram of UART and explain the function of each block in detail. [5M]
- 10.a) Draw and explain the architecture of ARM processor. [6M]
 - b) Summarize the program status register instructions. [4M]
- OR**
- 11.a) Describe briefly about the register set of ARM processor. [6M]
 - b) List out different thumb instructions used in ARM processor. [4M]
