| Code No.: EC502PC | R20 | H.T.No. | | | 8 | R | | | | | | |
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**CMR ENGINEERING COLLEGE: : HYDERABAD**
**UGC AUTONOMOUS**
**III–B.TECH–I–Semester End Examinations (Supply) – December 2025**
**MICROPROCESSORS & MICROCONTROLLERS**
**(ECE)**

**[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.

**PART-A** **(20 Marks)**

| | | | |
|---|---|---|---|
| 1. | a) | How to calculate the Physical memory of 8086 with one example? | [2M] |
| | b) | Draw the flag register bits in 8086 microprocessor. | [2M] |
| | c) | List out the features of 8051 Microcontroller. | [2M] |
| | d) | What are different types of addressing modes used in 8051 microcontroller? | [2M] |
| | e) | Write short notes on USB. | [2M] |
| | f) | Give the RS 232 Standard details. | [2M] |
| | g) | List out different registers used in ARM processor. | [2M] |
| | h) | List out few comparisons of ARM and 8051 Microcontroller. | [2M] |
| | i) | Write the different applications of OMAP processor. | [2M] |
| | j) | Expand OMAP processor and mention its memory capacity. | [2M] |

**PART-B** **(50 Marks)**

| | | |
|---|---|---|
| 2. | What is memory segmentation? Explain the use of segmentation in different applications. | [10M] |
| | **OR** | |
| 3. | List out different string manipulation instructions used in 8086 microprocessor and explain each one in detail. | [10M] |
| 4. | What are the interrupts available in 8051? Explain about the Interrupt Structure. | [10M] |
| | **OR** | |
| 5. | Draw the internal architecture of 8051 family microcontroller and explain each block of it. | [10M] |
| 6. | Draw the internal circuit diagram of UART and explain the function of each block in detail. | [10M] |
| | **OR** | |
| 7. | Draw the interface circuit diagram of LCD with 8051 and explain its operation in detail. | [10M] |
| 8. | Define Pipeline? Explain the Five stage pipeline concept in ARM processor. | [10M] |
| | **OR** | |
| 9. | Explain the concept of ARM instructions in detail. | [10M] |
| 10. | Explain the concept of super scalar pipeline of CORTEX processor along with circuit diagram. | [10M] |
| | **OR** | |
| 11. | Draw OMAP processor architecture and explain each block in detail. | [10M] |

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