B.Tech Even Semester Examination, May, 2025

Electronics & Communication Engineering

(4th Semester)

Course No: ECC-255

(Microcontroller)

Full Marks: 70

Pass Marks: 28

Time: 3 hours

Note:

1. Attempt any five questions taking one from each unit.
2. Begin each answer in a new page
3. Answer parts of a question at a place
4. Assume reasonable data wherever required
5. The figure in the right margin indicates full marks for the question
6. All the mathematical symbols and abbreviations have their usual meanings.

UNIT-I

1. Draw the pin diagram of 8085 μP and explain the functionality of each pin. Explain the requirement of a program counter and stack pointer in the architecture of 8085 microprocessor. (10+2+2=14)

2. Describe the internal architecture of 8086 microprocessor with neat diagrams. (2+2+10=14)

UNIT-II

3. Draw the flag register of 8051 μC and describe the functionality of each flag in detail. List various addressing modes of 8051 microcontroller and explain them with an example each. (6+8=14)

4. Explain the control word format for register TMOD and IE of 8051. Explain following instructions with examples: ANL, RR, CJNE, DJNZ. (6+8=14)

UNIT-III

5. With a neat block diagram explain in detail the architecture of 8251 USART. (2+2+10=14)

6. With necessary illustrations explain how to interface an 8-bit ADC with 8051 microcontrollers. Explain about the Modes of operation of the programmable interval timer of 8254. (8+6=14)

UNIT-IV

7. What is memory and explain RAM and ROM in detail. Construct an Interface of 16k bytes of ROM & 32k bytes of RAM chips with 8051. Interface the memory such that starting address for ROM is 0000H & RAM is 8000. (6+8=14)

8. Describe the internal architecture of 80286 processor with neat diagrams. Draw the architecture diagram of Pentium Processor. (10+4=14)

UNIT-V

9. With a neat block diagram explain in detail the architecture of ARM7. (2+2+10=14)

10. Compare CISC and RISC processors. List the features of SUN UltraSPARC and also discuss its register bank. (4+5+5=14)

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