

BT-5/D05

**Microprocessors and Interfacing
(EC & Electrical)**

Paper : ECE-311 E

Time—Three Hours]

[Maximum Marks—100

Note :— Attempt any Five questions in all, selecting at least One question from each part.

UNIT—1

1. (a) Explain in detail the Execution Unit of 8086 μ P. What are the applications of registers present in EU ? 10
- (b) Discuss in brief that how the evolution of microprocessors took place. What are various applications of microprocessors ? 10
2. (a) What is the function of the 8086 queue and how does it speed up process operation ? 7
- (b) What are main differences between an 8086 operating in minimum mode and operating in maximum mode ? 7
- (c) Discuss how the 8086 CIR and reset signals are generated using 8284 6

UNIT—II

3. (a) Explain the following instructions :
IDIV, ESC, JNA, SCAS, LOCK. 10
- (b) Explain instruction formats of 8086 μ P. 7
- (c) What do you understand by Procedures and Macros ? Discuss. 3
4. (a) Write a 8086 program to produce a packed BCD from two ASCII encoded digits. The first ASCII digit (3) is located in AL. The second ASCII digit (9) is located in BL. The result (the packed BCD) is to be left in AL. 10
- (b) Write the 8086 instruction that will perform the indicated operation:
(i) Copies AL to BL
(ii) Copies DL to a memory location whose offset is in BX. 7
- (c) What do you understand by the term modular programming? Discuss in brief. 3

UNIT—III

5. (a) Describe the memory-mapped I/O and direct I/O. Give the main advantage and disadvantage of each. 8
- (b) Describe the timing diagram of an 8086 microprocessor signals for Read operation in minimum mode of operation. 7
- (c) Write a short note on TMS 4500. 5
6. (a) How address decoding is done in 8086 while interfacing ROM chips ? Discuss with the help of some examples 10
- (b) Draw and discuss the timing diagram of 8086 μ P signals during write operation in the minimum mode. 10

UNIT—IV

7. (a) Draw and discuss the internal block diagram of 8255A PPI. 6
- (b) What do you understand by microcomputer video displays ? Discuss their operation. 6
- (c) Interface 4×4 keymatrix with 8086 through 8255 PPI. Draw and discuss the flow chart to perform the following functions :
 - (i) To test that all the keys are open
 - (ii) To find out the key code for the pressed key. 8
8. (a) Discuss briefly the D/A converter operation and applications with respect to interfacing with μ P. 7
- (b) What is intel 8259 chip ? Discuss its use and operation in a 8086 microprocessor based system. 7
- (c) Describe the interrupt response of an 8086 processor. 6

