

**Bachelor of Science (B.Sc. I.T.) (Semester-III) (C.B.S.) Examination**

**MICROPROCESSOR AND ALP**

**Paper—1**

Time : Three Hours]

[Maximum Marks : 50

**N.B. :—** (1) **ALL** questions are compulsory carry equal marks.

(2) Draw neat and well labelled diagram wherever necessary.

**EITHER**

1. (a) What do you mean by pipelined architecture ? How it is implemented in 8086 ? 5  
(b) Explain the function of opcode prefetch queue in 8086. 5

**OR**

- (c) Draw and discuss the flag register of 8086 in brief. 5  
(d) Draw the general purpose register organisation of 8086 and explain typical application of each register. 5

**EITHER**

2. (a) Draw and discuss the read and write cycle timing diagram of 8086 minimum mode. 5  
(b) What are different modes of operation of 8255 ? Also explain the control word format of 8255 for mode-0. 5

**OR**

- (c) What is DMA ? What is the advantage of DMA controlled data transfer over interrupt driven or program controlled data transfer ? 5  
(d) What is ALO and OLA convector ? Explain interfacing of OLA convector with  $\mu$ p. 5

**EITHER**

3. (a) How does 8259 A differentiate between 8 bit and 16 bit processor ? 5  
(b) How do you interface 8259 A with 8086 in maximum mode ? Draw its schematic. 5

**OR**

- (c) What is vector interrupt table of 8086 ? Explain its structure. 5  
(d) Explain the interrupt response sequence of 8086. What is the difference between hardware and software interrupt ? 5

**EITHER**

4. (a) Draw and discuss internal architecture of 80386 in detail. 5  
(b) State and discuss the salient features of 80386. 5

**OR**

- (c) What do you mean by paging ? What are its advantages and disadvantages ? 5  
(d) Draw and discuss the paging mechanism of 80386 in detail. 5
5. Attempt **all** :
- (a) What is nested macro ? Explain. 2½  
(b) Draw and explain typical stepper motor interface with 8255. 2½  
(c) Discuss the asynchronous mode transmit and receive data formats of 8251. 2½  
(d) Explain the physical address formation in real address mode of 80386. 2½