

7. Explain the following :

- (a) Memory Management Hardware 8  
(b) I/O Processor 8

**UNIT – IV**

8. (a) What do you understand by Vector Processing ?  
State its significance and also enumerate certain applications that demand Vector Processing. 8

(b) What is Pipelining ? When, where and why is it necessary ? Also differentiate between the Instruction Pipelining and Arithmetic Pipelining. 8

9. Explain the following :

- (a) Applications of Parallel Processing 8  
(b) Pipelined Processors and their design 8

Roll No. ....

**67057**

**MCA 2nd Semester CBCS Scheme  
w.e.f. 2016-17 Examination – May, 2018**

**COMPUTER ORGANIZATION AND ARCHITECTURE**

**Paper : 16MCA32C2**

*Time : Three Hours ]*

*[ Maximum Marks : 80*

*Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.*

*Note : Question No. 1 is compulsory. Apart from it, attempt four questions by selecting one question from each Unit. All questions carry equal marks.*

1. (a) What are Segment Registers ? 8 × 2 = 16  
(b) What is a microprogram ? How is it different from program ?  
(c) What are Bernstein's conditions for parallelism ?

- (d) What is the significance of RTL ?
- (e) What is associative memory ? State its relevance.
- (f) What is Superscalar architecture?
- (g) What are array processors ?
- (h) What is interleaved memory organization ?

### UNIT – I

- 2. (a) What are addressing modes ? What are various types of addressing modes for 8086/8088 microprocessor ? Explain. 8
- (b) What is the structure of an 8086/8088 Assembly Language program ? Outline the purpose of each element. 8
- 3. Explain the following :
  - (a) Instruction Cycle Flowchart 8
  - (b) Instruction Formats 8

### UNIT – II

- 4. (a) What is a Control Unit ? What are the basic functions of Control Unit ? What is the general model of a Control Unit ? Illustrate a CPU indicating all its functional units and corresponding control signals. 10
- (b) Differentiate between RISC and CISC. 6
- 5. What are micro-operations ? What are its various types ? Illustrate the implementation of each category of microoperations through its block diagram(s). Also discuss how these ultimately help in design of a computer system. 16

### UNIT – III

- 6. (a) What is an I/O module ? What are the functions performed by an I/O module ? Illustrate the general structure of an I/O module. 8
- (b) What do you understand by priority interrupt ? Discuss their significance as well as implementation. 8