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. .....

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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 ? $8 \times 2 = 16$

(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