Roll No. .....

67057

MCA 2nd Semester CBCS Scheme
w.e.f. 2016-17 (Re-Appear)
Examination – October, 2020

COMPUTER ORGANIZATION AND ARCHITECTURE

Paper : 16MCA32C2

Time : 1.45 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 : Attempt any ***three*** questions. All questions carry equal marks.

1. (a) What is associative memory ? State its relevance.

   (b) What is Superscalar architecture ?

   (c) What are Segment Registers ?

   (d) What is a microprogram ? How is it different from program ?

   (e) What are array processors ?

   (f) What is interleaved memory organization ?

   (g) What are Bernstein's conditions for parallelism ?

   (h) What is the significance of RTL ?

2. (a) What is the structure of an 8086/8088 Assembly Language program ? Outline the purpose of each element.

   (b) What are addressing modes ? What are various types of addressing modes for 8086/8088 microprocessor ? Explain.

3. Explain the following :

   (a) Instruction Formats

   (b) Instruction Cycle Flowchart

4. What are micro-operations ? What are its various types ? Illustrate the implementation of each category of micro- operations through its block diagram(s). Also discuss how these ultimately help in design of a computer system.

5. (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.

   (b) Differentiate between RISC and CISC.

6. (a) What do you understand by priority interrupt ? Discuss their significance as well as implementation.

   (b) 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.

7. Explain the following :

   (a) I/O Processor

   (b) Memory Management Hardware

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

   (b) What is Vector Processing ? State its significance and also enumerate certain applications that demand Vector Processing.

9. Explain the following :

   (a) Pipelined Processors and their design

   (b) Applications of Parallel Processing
