

Roll No. ....

**67072**

**M.C.A. 2nd Semester (with new notes) M.M. 80 w.e.f. May, 2013**

**Examination-May, 2017**

**COMPUTER ORGANISATION &  
ARCHITECTURE (NEW)**

**Paper-MCA-202**

**Time : 3 hours**

**Max. 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 the examination.

---

**Note :** Question No. 1 is **compulsory**. In addition to Ques. No. 1, attempt **four** more questions, one from each Unit. All questions carry equal marks.

1. (a) What different functional units are involved in execution of a program ?  
Explain their respective tasks.

67072-450-(P-7)(Q-9)(17)

( 1 )

[ Turn Over

- (b) Differentiate between fetch, decode and execute phases of a cycle with appropriate examples.
- (c) Provided with 16-bit value 1001101011001101. What operation will you perform to set the last eight bits to 1 ?
- (d) List different signals involved while performing synchronous data transmission with their respective meanings.
- (e) Explain how Input Output Processor is different from Central Processor in performing their tasks ?
- (f) What is the hardware organization of Auxiliary Memory ? Draw the labelled diagram.

9. (a) What are array processors ? Explain how array processors are used to improve the system's output. Detailed out how attached array processors are integrated with host computer.
- (b) Discuss any two real applications briefly where parallel processing is followed.

---

<http://www.HaryanaPapers.com>

Whatsapp @ 9300930012

Your old paper & get 10/-

पुराने पेपर्स भेजे और 10 रुपये पायें,

Paytm or Google Pay से

7. Define interrupts. What important role interrupts play in basic working of any computer system? Differentiate between vectored and non-vectored interrupts with relevant examples. Discuss any one technique of your choice which can solve the priority issue among different interrupts. <http://www.HaryanaPapers.com>

#### UNIT-IV

8. (a) What is the exact meaning of throughput of the system? Explain different functional units that can affect the throughput of the system with the help of a labelled diagram.
- (b) Define the Space Time Diagram. How is it useful in representing the working of pipeline under different clock cycles?

- (g) Explain how hardware interlocks can avoid the data dependency issue in parallel computers.
- (h) List different measuring units used to evaluate the computer performance while performing floating point operations.

#### UNIT-I

2. (a) Explain why is it advantageous to have common bus system in computer system. Design a common bus system for six registers.
- (b) Discuss the working of any basic computer with its block diagram according to Von Neumann Concept. Also discuss the Von Neumann bottleneck problem faced by this design.

3. (a) How computer instructions are different from computer micro instructions ? Explain the different types of Instruction Formats with at least four examples each.
- (b) Differentiate between Hardwired and Micro programmed Controlled Unit.

#### UNIT-II

4. (a) What do you mean by Instruction Set Completeness ? Explain.
- (b) Formulate a hardware procedure for performing addition and subtraction for Signed Magnitude numbers. Discuss the complete addition process of the same with the help of a flowchart.

5. Explain the Instruction Cycle used for executing an Instruction in the computer system. Draw the complete flowchart depicting the instruction cycle with all its phases. Explain the following instructions: LDA, BUN, BSA and ISZ including information about operation decoder and Timing slot.

#### UNIT-III

6. (a) Discuss the working of Content Addressable Memory. How it improves the efficiency of memory operations ?
- (b) Differentiate between strobe and handshaking signals with appropriate signal diagrams.