

2015

MCA

2nd Semester Examination

COMPUTER ARCHITECTURE & ORGANIZATION

PAPER—MCA-203

Full Marks : 100

Time : 3 Hours

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer Q. No. 1 and any five from the rest.

1. Answer any five questions : 2×5

(a) Distinguish between autoincrement and autodecrement addressing mode.

(Turn Over)

- (b) What is virtual memory and what are the benefits of virtual memory ?
 - (c) What do you mean by instruction cycle ?
 - (d) Differentiate between static RAM and dynamic RAM.
 - (e) What do you mean by machine cycle and instruction cycle ?
 - (f) What is an impedance state ?
 - (g) What do you mean by memory mapped I/O ?
2. Explain the different types of addressing modes available with example. 12
3. What is memory stack organization ? Briefly explain the way operations are performed on memory stack. 2+10
4. (a) Differentiate between hardwired and micro-programmed control.
- (b) What is associate memory ? Draw the block diagrams of associate memory and explain how the read and

write operations performed in associate memory ?

4+8

5. (a) Consider a typical RAM chip of 128×2 . Explain how to construct a memory system of 512×2 and 128×8 using suitable number of RAM chips.

(b) State the working principle of different basic computer registers and memory through a common bus system.

6+6

6. (a) Discuss Booth's algorithm with an example.

(b) What is an instruction pipeline ? 10+2

7. (a) Draw the block diagram of control unit of basic computer and discuss the working procedure of control unit.

(b) What is a microoperation ? State any two types of microoperations. 8+4

8. (a) Design a bus system in a multi-registering configuration for 8, 16 bit registers. Briefly explain the process applied.

(b) What is an interrupt? Explain any one interrupt.

8+4

Internal Assessment — 30
