1C8113

Roll No. _____ Total No. of Pages: 2

1C8113

M.C.A. I - Sem. (Main / Back) Exam., - 2023

MCA – 104 Computer Architecture

Time: 3 Hours **Maximum Marks: 70**

Min. Passing Marks: 28

Instructions to Candidates:

Attempt all ten questions from Part A. All five questions from Part B and three questions out of five from Part C.

Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. NIL 2. NIL

PART – A

[10×2=20]

(Answer should be given up to 25 words only)

All questions are compulsory

Q.1 What is sequential circuit?

Q.2 What are latches?

Q.3 What do you mean by a micro-operation?

Q.4 What are the key functions of control unit?

Q.5 Find the binary equivalent of $(243.12)_{10}$

Q.6 What is a control register?

Q.7 What is associative memory?

Q.8 What is the purpose of assembler directives?

Q.9 Define an instruction format.

Q.10 What do you mean by multi-processing?

PART – B

[5×4=20]

(Analytical/Problem solving questions)

Attempt all five questions

Q.1 Simplify the following expression using Boolean algebra –

(i) $(BC' + A'D)(AB' + CD')$

(ii) $AB + A(CD + CD')$

Q.2 Explain briefly about system fuses.

Q.3 Explain different types of data transfer modes.

Q.4 Explain linking and loading process in a computer system.

Q.5 Explain the concept of shared-memory.

PART – C

[3×10=30]

(Descriptive/Analytical/Problem Solving/Design Questions)

Attempt any three questions

Q.1 What is flip-flop? Explain briefly about SR, D, JK & T flip-flops.

Q.2 Draw and explain the schematic design of ALU and CU.

Q.3 Explain different addressing modes of instructions.

Q.4 State and explain the memory organization and memory hierarchy.

Q.5 Draw and explain the functional block diagram of 8085 microprocessor.
