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Total No. of Pages: 02

Total No. of Questions: 09

MCA (2015 & Onwards) (Sem. – 1)
COMPUTER ORGANIZATION & ASSEMBLY LANGUAGE

M Code: 72709

Subject Code: MCA-103

Paper ID: [72709]

Time: 3 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

1. SECTIONS-A, B, C & D contains TWO questions each carrying TEN marks and students has to attempt any ONE question from each SECTION.
2. SECTION-E is COMPULSORY consisting of TEN questions carrying TWENTY marks in all.

SECTION A

1. Explain the various instruction formats using the following expression: $A+B*C+D$.
2. Discuss in detail the stack organization and explain how expressions are evaluated using stack organization?

SECTION B

3. What is Input-output Interface? Briefly discuss and compare the following I/O schemes:
i) Programmed I/O ii) Interrupt driven I/O.
4. Define Pipelining. Discuss the principles of pipelining. What are the various problems and performance issues in pipelining?

SECTION C

5. Define Associative Memory. Explain the matching logics as used in Associative Memory.
6. Discuss the various page replacement algorithms.

SECTION D

7. Discuss the architecture and operations of a Microprocessor.
8. Write an assembly language program for a typical 8-bit processor to sort a list of numbers.

SECTION E

9. a) Write the characteristics of RISK architecture.
- b) What is the purpose of program counter?
- c) What is hardwired control?
- d) How memory mapping is done in relative addressing mode?
- e) Write short note on software interrupts.
- f) What is vector processing?
- g) What is the purpose of DMA controller?
- h) Write the major differences between CPU and peripheral devices.
- i) What do you mean by Virtual memory?
- j) What is Segmentation?