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Total No. of Pages : 02

Total No. of Questions : 09

MCA (E-I) (2015 & Onwards) (Sem. – 3)
SYSTEM PROGRAMMING

M Code: 74077

Subject Code: MCA-305A

Paper ID: [74077]

Time: 3 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

1. **SECTIONS-A, B, C & D** contains **TWO** questions each carrying **TEN** marks each and students have 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. Discuss the overall design of pass 1 of an assembler with the complete description of data structures used in it. (10)
2. a) Describe the language processor in detail with various language processing activities. (7)
b) What is a conditional macro? Explain with the help of an example. (3)

SECTION B

3. Briefly discuss different types of loader schemes. How these loading schemes are different from each other. Which loader scheme is the best one? Justify your answer. (10)
4. How linker is different from loader? Explain the design of MS-DOS linker in detail. (10)

SECTION C

5. a) Discuss the top-down parsing scheme with the help of an example. (5)
b) What is the role of lexical and syntax analysis? (5)
6. What is the need of code optimization? What are the different techniques of code optimization? Explain with the help of suitable examples. (10)

SECTION D

7. Explain the different functions of an operating system. (10)
8. Write short notes on the following:
- a) Difference between real-time OS, Distributed OS and Network OS. (5)
 - b) USB and Plug and Play systems. (5)

SECTION E

9. a) What do you mean by two pass assembler?
- b) What is a dummy argument in macro? Illustrate with an example.
- c) What is the use of bootstrap loader?
- d) What is the difference between machine-ops and pseudo-ops?
- e) What is the difference between interpreter and compiler?
- f) What is the difference between passes and phases of compiler?
- g) What do you mean by YACC?
- h) What is re-entrant code? Explain with an example.
- i) What is the user interface criteria for a debugger?
- j) What do you mean by API?
- (10x2=20)