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**MCA (Elective - I) (Sem. - 3<sup>rd</sup>)**

**SYSTEM PROGRAMMING**

**SUBJECT CODE : MCA - 305(A) (2012 Batch)**

**Paper ID : [B1161]**

**Time : 03 Hours**

**Maximum Marks : 100**

**Instruction to Candidates:**

- 1) Attempt any **One** question from Sections - A, B, C & D.
- 2) Section - E is **Compulsory**.

**Section - A**

**(1 × 20 = 20)**

**Q1)** What is one pass assembler? How it is different from multi-pass assembler?  
Draw and explain the flowchart for one pass assembler.

**Q2)** Write notes on the following:-

- a) Input and output of Macro Processor
- b) Conditional Macro Expansion

**Section - B**

**(1 × 20 = 20)**

**Q3)** Define loader. What are its functions? Discuss various loaders schemes with their merits and demerits.

**Q4)** Write notes on the following:-

- a) Features of MS-DOS Linker
- b) Design of Text Editor

**Section - C**

**(1 × 20 = 20)**

**Q5)** What is compiler? How it is different from assembler and interpreter? Explain various phases of compiler by indicating the main function of each phase.

**Q6)** Explain the following:-

- a) YACC and its features
- b) Just-in-time-compiler

### Section - D

(1 × 20 = 20)

- Q7)** a) Define distributed operating system? Discuss its characteristics features.  
b) What is multiprogramming operating system? How it is different from multiprocessing and multithreading operating systems.

**Q8)** Write notes on the following:-

- a) API
- b) Subroutines

### Section - E

(10 × 2 = 20)

**Q9)**

- a) List various features of assembly language.
- b) List various features of macro facility.
- c) What is uniform symbol table? What is its role in compiler?
- d) Define finite automata.
- e) List various features of screen editor.
- f) What is translator? Discuss its need.
- g) What are advantages of word processor over text editor?
- h) Define hard and soft real time operating systems.
- i) List various advantages and disadvantages of USB and Plug & Play devices.
- j) What are various functions of network operating systems?

