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Total No. of Questions : 09] [Total No. of Pages : 02

MCA (Sem. - 4th)

SYSTEM SOFTWARE

SUBJECT CODE : MCA - 403 (N2)

Paper ID : [B0117]

[Note : Please fill subject code and paper ID on OMR]

Time : 03 Hours **Maximum Marks : 60**

Instruction to Candidates:

1) Attempt any One question from each sections - **A, B, C & D.**
2) Section - E is **Compulsory.**
3) Use of non-programmable **Scientific Calculator** is allowed.

Section - A

(1 × 10 = 10)

Q1) Describe the transformations a program does undergo before it gets executed.

Q2) Explain about various job scheduling algorithms in detail.

Section - B

(1 × 10 = 10)

Q3) Explain with the help of a block diagram, the analysis and syntheses phases of compiler.

Q4) Write the algorithm for minimizing the number of states of a DFA.

Section - C

(1 × 10 = 10)

Q5) List various optimization applied at the code generation phase with simple examples.

Q6) Explain the design of two pass assembler in detail with help of necessary algorithms.

Section - D

(1 × 10 = 10)

Q7) Explain conditional macro expansion and recursive macro expansion with examples.

Q8) What is linkage editor? Give the functions of linkage editor.

Section - E

Q9) *(10 × 2 = 20)*

a) What is system software?

b) What are preprocessors?

c) What is the difference between process and program?

d) What are the functions of dispatcher?

e) Define nondeterministic finite automata.

f) What are the problems in code generation?

g) What is literal?

h) What is forward reference problem in assembler?

i) What is compile and go loader?

j) What is dynamic linking?

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