Paper ID [MC403]

(Please fill this Paper ID in OMR Sheet)

MCA (Sem. - 4ᵗʰ)

SYSTEMS SOFTWARE (MCA - 403) (N2)

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**.

Section - A

$(1 \times 10 = 10)$

Q1)   Explain the difference between (processor, procedure); (procedure, program); (processor, I/O channel); (multiprocessing, multiprogramming); and (open subroutine, closed subroutine) with the help of suitable examples.

Q2)   Discuss the design procedure of a two-pass assembler with the help of a suitable block diagram.

Section - B

$(1 \times 10 = 10)$

Q3)   What is macro definition, macro call and macro expansion? Explain the working of nested macro calls with the help of suitable code fragments.

Q4)   a)   Discuss the working of a direct-linking loader.

b)   What is binding? Discuss various advantages and disadvantages of binding at execution time over binding at load time.

Section - C

$(1 \times 10 = 10)$

Q5)   Draw a block diagram of the phases of a compiler and discuss the main functions of each phase.

Q6)   What is code optimization? Give three examples of machine-dependent optimization. State where these types of optimization are performed in the compiler and explain the trade-offs of optimization there rather than at some earlier or later time.

Section - D

Q7) Distinguish between races and stalements. How do they arise, and what can be done to prevent or handle them?

Q8) What is continuous memory allocation? Discuss segmented paged allocation with the help of a diagram.

Section - E

(10 × 2 = 20)

Q9)

a) What is the concept of simple paging?

b) What is a impure interpreter?

c) What is a formal system?

d) What is radix sort?

e) What is a absolute loader?

f) What is the purpose of uniform symbol?

g) What do you mean by a self relocating program?

h) What is demand paging?

i) What is a spooler?

j) Why is segmented, paged environment conductive to file management?

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