Roll No. : _____

Total Printed Pages : 3

4E2017

B. Tech. (Sem. IV) (Reback) Examination, June/July - 2011
Computer Engg.
4CS4 System Software Engineering

Time : 3 Hours]

[Total Marks : 80
[Min. Passing Marks : 24

Attempt overall **five** questions. Selecting **one** question from each unit.
All questions are carry **equal** marks.
(Schematic diagrams must be shown wherever necessary. Any data
you feel missing may suitably be assumed and stated clearly).
Units of quantities used/calculated must be stated clearly

Use of following supporting material is permitted during examination.
(Mentioned in form No. 205)

1. _____ Nil _____   2. _____ Nil _____

Unit - I

1 (a) Differentiate application and system programming ? How
       does system programming is further classified ?

8

   (b) Explain internal and external representation of instruction
       and data ?

8

OR

1 (a) How does hashing improves the performance of searching ?
       Explain hash table organization in detail.

8

   (b) Explain the type and structure of editors in detail.

8

Unit - II

2 (a) Explain the use of literals in assembly language. How does
       they differ from constants and immediate operands ?

4

(b) Explain pass I of a two pass assembler with the help of example. Also show the constants of various data structures after pas I for your example. rtuonline.com

12

OR

2 (a) Whether cross reference table is necessary in designing of 8088 IBM - PC assembler ? Give answer with reason.

4

(b) Explain the algorithm of single pass assembler of IBM PC.

12

Unit - III

3 (a) What do you understand by program relocation ? Explain.

4

(b) Explain various components of the object module of a program.

4

(c) What are various machine dependent and independent features of a loader.

8

OR

3 (a) What is overlay structured program ? How does linking is performed in these overlays.

8

(b) Explain pass 1 of MS - DOS linker.

8

Unit - IV

4 (a) Write a macro to evaluate the expression A*B+C*D using conditional macro expansion.

8

(b) Explain following features of macro with example :
(i) Nesting
(ii) Keyword and positional parameters

8

OR

4   (a)   Write the algorithm for processing of macro definition.

8

     (b)   Write short note on MASM macro processor.

8

Unit - V

5   (a)   Show the step by step passing of following string using operator precedence passing :

$\vdash id *(id + id) *id \dashv$

10

     (b)   What do you understand by lexical ambiguity and how would you avoid it.

6

OR

5   (a)   Write a recursive decent parser for following grammer after rewriting the grammer in required format :

$E \rightarrow E+T|E-T|T$

$T \rightarrow T*V|T/V|V$

$V \rightarrow id$

8

     (b)   Explain the role of language processor development tools.

8

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