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07MCA31

Third Semester MCA Degree Examination, December 2010
Systems Software

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions.

- 1 a. Describe the following terms :
 - i) Compiler
 - ii) Assembler
 - iii) Macro processors
 - iv) Loader or Linker
 - v) Operating system. (10 Marks)
- b. Bring out the differences between system software and application software. (04 Marks)
- c. Write a program to add 2 multiword data available in the memory location ALPHA and BETA and store the result at GAMMA. (06 Marks)
- 2 a. Explain the data structures used in the design of an assembler, with respect to pass 1 and pass 2. (06 Marks)
- b. What are the assembler directives? Explain any three assembler directives. (04 Marks)
- c. Explain the following, with respect to assembler design :
 - i) Expression
 - ii) Symbol defining statement (10 Marks)
- 3 a. Describe the design of one – pass assemblers. (10 Marks)
- b. Write the algorithm for pass – 2 assembler. (10 Marks)
- 4 a. Describe the basic loader functions. (05 Marks)
- b. Explain the options of loader design. (10 Marks)
- c. What are the advantages and disadvantages of linking loader? (05 Marks)
- 5 a. Explain the different debugging functions and debugging capabilities. (10 Marks)
- b. Describe the user interface criteria. (05 Marks)
- c. List out the semantic routines invoked by the command language processor. (05 Marks)
- 6 a. Explain the basic macro processor functions. (10 Marks)
- b. Explain the data structures for one –pass microprocessor. (10 Marks)
- 7 a. Write a program in Yacc to test for the validity of an identifier. (08 Marks)
- b. Describe how the parser responds to conflicts. (04 Marks)
- c. Write a Lex program to recognize whether a given sentence is simple or compound. (08 Marks)
- 8 a. Write a Yacc program to recognize a valid expression. (10 Marks)
- b. Explain the structure of Lex and Yacc program, with examples. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification. will be treated as malpractice. Deal to evaluator and /or equations written eg, 42+8 = 50

