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Question Paper Code : 21309

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2013.

Fifth Semester

Computer Science and Engineering

CS 2304/CS 54/CS 1304 A/10144 CS 505 —SYSTEM SOFTWARE

(Common to Information Technology)

(Regulation 2008/2010)

(Common to PTCS 2304-System Software for B.E (Part-Time) Fourth Semester-CSE-Regulation 2009)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Write any two assembler directives used by SIC/XE.
2. Write a SIC code to copy an 11 byte character string to another.
3. What is program relocation?
4. How literal differs from immediate operand?
5. Give the algorithm for absolute loader.
6. What is meant by dynamic linking?
7. What are the data structures used by macro processor?
8. What is the advantage of keyword macro parameters?
9. What are the tasks involved in document editing process?
10. What is the use of tracing?

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PART B — (5 × 16 = 80 marks)

11. (a) (i) Write and explain the sequence of code in SIC and SIC/XE to read 200 byte record from the device 'F1' using subroutine. (10)
- (ii) Write a sequence of code in SIC to implement the following expression.

BETA <- ALPHA + INCR -1

DELTA <- GAMMA+INCR -1 (6)

Or

- (b) Compare SIC and SIC/XE architectures with respect to memory, Instruction formats, addressing modes and data formats. (16)
12. (a) How forward references are handled by multi pass assembler? Illustrate with an example. (16)

Or

- (b) (i) How an assembler calculates displacement for PC-relative and Base relative addressing modes? (10)
- (ii) Describe the data structures used by an assembler. (6)
13. (a) Why linking loader requires 2 passes to complete loading? Explain the operations of linking loader.

Or

- (b) (i) Differentiate between linkage editor and linking loader. (10)
- (ii) Describe the various record types in MS-DOS linker. (6)
14. (a) With an example program, explain the process of conditional macro expansion.

Or

- (b) Explain the concatenation of macro parameters and handling of labels by macro processor with examples.
15. (a) Discuss functions and capabilities of an interactive debugging system.

Or

- (b) Describe the structure of a text editor and discuss some of the system related issues.