

(3 Hours)

Total Marks: 80

- N.B.:** (1) Question No. 1 is compulsory.
 (2) Attempt any three questions out of remaining five questions.

- Q1. (a) What is system software & application software? (05)
 (b) Explain different features of macros. (05)
 (c) Compare Compiler and Interpreter. (05)
 (d) Write a note on: Java Compiler environment. (05)
- Q2. (a) With reference to macroprocessor, explain the following tables with suitable example. (10)
 (i) MNT (ii) MDT (iii) ALA
 (b) Explain the different code optimization techniques in compiler design. (10)
- Q3. (a) Draw flowchart and explain with databases the working pass 2 of assembler. (10)
 (b) Explain various functions of loader. Compare linking loader and linkage editor. (10)
- Q4. (a) Consider the following grammar (10)
 $S \rightarrow (A) | 0$
 $A \rightarrow SB$
 $B \rightarrow ,SB | \epsilon$
 Is the above grammar LL (1)? Justify your answer.
 (b) Explain different types of Intermediate code representations. (10)
- Q5. (a) Explain the different types of garbage collection and compaction in compilers. (10)
 (b) Differentiate Top-down and Bottom-up parsing techniques. Explain recursive descent parser with an example. (10)
- Q6. (a) Explain the different phases of compiler. Illustrate all the output after each phase for the following statement:
 $a = b + c - d * 5$
 (b) Write short note on: (10)
 (i) Synthesized and Inherited attributes.
 (ii) Debug monitor.

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