(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-> (A)|0
A-> SB
B->,SB|ε
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 attrinutes.
(ii) Debug monitor.

----------x----------