

( 3 Hours )

( Total marks : 80 )

**Note: (1) Question No. 1 is compulsory.**

**(2) Attempt any three questions out of remaining five questions.**

Q1. (a) Differentiate System Program and Application Program. (05)

(b) What is Macro? What are different features of macro? (05)

(c) Differentiate between compiler and interpreter. (05)

(d) Explain different types of Editors in brief. (05)

Q2. (a) With reference to assembler, explain the following tables with suitable example. (10)

(i) POT (ii) MOT (iii) ST (iv) LT (v) BT

(b) What are different phases of Compiler? Give the internal representation after each phase of Compiler for the following statement  
Position = initial + rate\*60. (10)

Q3. (a) Draw flowchart and explain with databases the working of PASS 1 Assembler. (10)

(b) Explain various storage allocation strategies. (10)

Q4. (a) Explain the design of the Absolute Loader and mention all the data structures in detail. (10)

(b) What is code optimization? Explain different code optimization techniques? (10)

Q5. (a) Design a predictive parser for the given grammar. (10)

$E \rightarrow E+T | T$

$T \rightarrow T * F | F$

$F \rightarrow (E) | id$

(b) Explain different pseudo-ops used for conditional macro expansion along with examples. (10)

Q6. Write a note on :

(a) Inherited and Synthesized attribute (05)

(b) Lex and YACC (05)

(c) Syntax directed translation (05)

(d) JAVA compiler environment (05)