

(Time: 3 Hours)

Total Marks: 80

N.B: (1) Question No. 1 is compulsory

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

- Q.1 (a) Enlist the different types of errors that are handled by Pass I and PassII of assembler. [05]  
 (b) Define Loader. What are different functions of loader. [05]  
 (c) Compare bottom up and top down parser. [05]  
 (d) What is the need of Intermediate code generation? Explain any two Intermediate code generation forms with example [05]
- Q.2 (a) What is Left factoring? Find FIRST & FOLLOW for the following grammar [10]  
 $S \rightarrow Aa$   
 $A \rightarrow B D$   
 $B \rightarrow b \mid \epsilon$   
 $D \rightarrow d \mid \epsilon$
- (b) What are the phases of compiler? Give working of each phase for the Following statements:- [10]  
 $\text{int } a, b, c = 1;$   
 $a = a * b - 5 * 3 / c;$
- Q.3 (a) Explain YACC in detail. [10]  
 (b) Explain machine independent code optimization techniques. [10]
- Q.4 (a) Compare Compiler with Interpreter. [05]  
 (b) Define left recursion? Eliminate left recursion from the following grammar [05]  
 $S \rightarrow (L) \mid x$   
 $L \rightarrow L, S \mid S$
- (c) Explain dynamic linking loader in detail. [10]
- Q.5 (a) Explain with flowchart design of two pass assembler. [10]  
 (b) Explain with example conditional macro expansion. [10]
- Q.6 (a) Explain different assembler directives with example. [10]  
 (b) Write short note on any two of the following: [10]  
 i) Syntax directed translation  
 ii) Code generation issues  
 iii) Operator precedence parsing

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