K18P 0751

Reg. No. : .....

Name : .....

Fourth Semester M.C.A. Degree (Regular/Supplementary/Improvement) Examination, July 2018

(2014 Admission Onwards)

MCA4C21 : SYSTEM PROGRAMMING & COMPILER DESIGN

Time : 3 Hours Max. Marks : 80

Instructions *:1) Answer* ***any ten*** *questions from Section* ***A****.* ***Each*** *question carries* ***three*** *marks.*

2) Answer ***all*** *questions from Section* ***B****.* ***Each*** *question carries* ***ten*** *marks.*

SECTION – A

Answer **any ten** questions. **Each** question carries **three** marks. **(10×3=30)**

1. Explain the listing and error reporting in assembler.
2. What is Macro and Macro Processor ?
3. What are the advanced macro facilities ?
4. What is the role of linkers and loaders ?
5. How translator can be constructed using Yacc ?
6. Define the terms :
   a) Parse tree
   b) Ambiguity
7. Construct the a) canonical LR and b) LALR sets of items for the grammar

   $S \rightarrow S\ S + \mid S\ S * \mid a$
8. What is a symbol table ?
9. What is top down and bottom up translation ?

P.T.O.

10. Define peephole optimization.

11. What is a basic block ?

12. Mention the issues to be considered while applying the techniques for code optimization.

SECTION – B

Answer **all** questions. **Each** question carries **ten** marks.

13. a) Describe some of the tasks that an assembler needs to perform. **10**

OR

b) Explain the concept Design of Macro processor with suitable figure and example. **10**

14. a) With a neat diagram explain the different phases of compiler. **10**

OR

b) What are tokens, patterns and lexemes ? Explain the role of lexical analyser using suitable figure. **10**

15. a) Explain the LALR table construction algorithm with suitable example. **10**

OR

b) Explain the concept of handle pruning with suitable example. **10**

16. a) What are the applications of Syntax directed translation ? Construct the syntax tree for the following grammar $S \rightarrow S\ S + \mid S\ S * \mid a$ and explain. **10**

OR

b) Explain bottom-up parsing of L-attributed SDD's with suitable example. **10**

17. a) Discuss the issues in the design of a code generator. **10**

OR

b) What are the basic blocks and how do you partition a three address code into basic blocks ? **10**