Examination Nov/Dec 2019

H-1044

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SUBJECT CODE NO:- H-1044
FACULTY OF SCIENCE AND TECHNOLOGY
T.Y.B.Tech.(CSE) (Sem VI)
Principles of Complier Design
[OLD]

[Time: Three Hours]   [Max.Marks: 80]

Please check whether you have got the right question paper.

N.B
i) Q.1 & Q.6 are compulsory.
ii) Solve any two questions from remaining in each section.

SECTION – A

Q.1   Answer the following questions.   10
   a) Define Context free grammar.
   b) What is Pause tree
   c) State the role of lexical analyzer
   d) Define left factoring
   e) What is compiler

Q.2   a) Explain the compiler writing tools in detail.   08
       b) Explain the assembler, compiler and interpreter.   07

Q.3   a) Discuss the problems in top downparsing with suitable examples. Explain how they can be   07
          overcome?
       b) Construct SLR Parser for following grammar   08
$$S \rightarrow aSSb$$
$$S \rightarrow aSSS$$
$$S \rightarrow c$$
       Show moves of above parser on one valid input string & one invalid input string.

Q.4   a) How to construct canonical LR parsing table.   07
       b) Explain automatic parser generator in detail.   08

Q.5   a) Explain LR grammars &LL(1) grammar.   07
       b) Explain predictive parser with FIRST & FOLLOW Set using any example.   08

SECTION – B

Q.6   Answer the following questions.   10
   a) What is symbol table
   b) Enlist the data structures used in symbol table.
   c) What is runtime storage administration
   d) Write SDT scheme for postfix notation.
   e) Define syntax tree

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Q.7	a)	Explain implementation of block structure languages.	08
	b)	Write short note on Code generation phase.	07
Q.8	a)	Explain DAG representation of basic blocks with one example.	07
	b)	What are the problems in code generation? Explain in detail.	08
Q.9	a)	Explain contents of symbol table in detail.	08
	b)	Explain SDT translation scheme for boolean expressions.	07
Q.10	a)	Consider the following basic block	08

$$t_1 = b + c$$
$$t_2 = d * e$$
$$t_3 = b + c$$
$$t_4 = t_2 * t_3$$
$$t_5 = t_4 * F$$
$$x = t_1 - t_5$$

Which of the following optimization are possible to be carried out with above basic blocks & why?

i) Common sub expression elimination.
ii) Dead code elimination

b) Explain the various types of error with example in detail.   07