Reg. No. :					

Question Paper Code: 36201

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Sixth Semester

Computer Science and Engineering

01UCS601 - PRINCIPLES OF COMPILER DESIGN

(Regulation 2013)

Duration: 1.15 hrs Maximum: 30 Marks

	PARI A - $(6 \times 1 = 6 \text{ Marks})$						
	(Answer any six of the following questions)						
1.	Which one is correct for language processing system?						
	(a) pre-processor→compiler→Assembler→Loader & Linker						
 (b) compiler→ pre-processor→Assembler→Loader & Linker (c) pre-processor→compiler→Loader & Linker→Assembler 							
2. In a compiler the module that checks every character of the source text is called							
	(a) The code generator (b) The code optimizer						
	(c) The Lexical analyser (d) The syntax analyser						
3.	Which data structure in a compiler is used for managing information about variables are their attributes?						
	(a) Abstract Syntax tree (b) Symbol Table						

(c) Semantic stack

(d) Parse table

The process of assigning load addresses to the various parts of the program and reflect the assigned addresses is called

(a) Assembly

(b) Parsing

(c) Relocation

(d) Symbol resolution

	(a) aaaabb	(b) aabbbb	(c) aabbab	(d) abbbba				
6.	The grammar S→CO	$C, C \rightarrow cC \mid d \text{ is}$						
	(a) LL(1)(c) LALR(1) but	not SLR(1)	* * * * * * * * * * * * * * * * * * * *	(b) SLR(1) but not LL(1) (d) LR(1) but not LALR(1)				
7.	A linker is given object modules for a set of programs that were compiled separately. What information need to be included in an object module?							
			•	the object module				
8.	In a bottom-up evalu	ation of a syntax dir	rected definitions, i	inherited attributes can				
		aluated only if the definition only if the definition						
	(d) Never be eval	•	nus synthesized					
9.								
	(a) 3	(b) 4	(c) 5	(d) 6				
10.	Which languages need	cessarily need heap a	allocation in the ru	ntime environment?				
	(a) those that su							
	(b) those that use dynamic scoping							
	(c) those that allow dynamic data structure(d) those that use global variables							
	(0)		3 x 8= 24 Marks)					
	(A	Answer any three of	f the following qu	estions)				
11.	1. Explain in detail the process of compilation. Illustrate the output of each phase of compilation for the input							
	_	* (b + c) * 2".		(8)				
12.	Convert the regu	lar expression (a/b)	*ab*# to DFA dire	ectly. (8)				

5. Which of the following strings is generated by the grammar?

13. Construct the parsing table for the grammar

$$S \rightarrow iEtSS' \mid a$$

 $S' \rightarrow eS \mid \epsilon$
 $E \rightarrow b$

and design a syntax analyzer for a sample language.

14. For the following given grammar construct the syntax directed definition and generate the code fragment using S-attributed definition

$$S \rightarrow EN$$
 $E \rightarrow E + T | E - T | T$
 $T \rightarrow T^*F | T/F | F$
 $F \rightarrow (E) | digit$
 $N \rightarrow ;$
(8)

15. Elaborate the issues involved in design of a code generator. (8)

(8)