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Reg. No. : | | | | | | | | | | |

Question Paper Code: 96201

B.E./B.Tech. DEGREE EXAMINATION, NOV 2024

Sixth Semester

Computer science and Engineering

19UCS601- PRINCIPLES OF COMPILER DESIGN

(Regulations 2019)

Duration: Three hours Maximum: 100 Marks

Answer All Questions

PART A - (5x 1 = 5 Marks)

1. Compiler should report the presence of _____ in the source program, in translation process. CO1- U

   (a) Classes (b) Objects (c) Errors (d) Text

2. Which of the following is a top down parser? CO1- U

   (a) recursive descent parser (b) shift reduce parser

   (c) operator precedence parser (d) SLR parser

3. Intermediate code is ---------- CO1- U

   (a) independent of source language (b)independent of target machine

   (c) dependent of source language (d) dependent of target machine

4. In activation record, Which of the following Stores the address of activation record of the caller procedure? CO1- U

   (a) Access Link (b) Actual Parameters (c) Control Link (d) Temporaries

5. The graph that shows basic blocks and their successor relationship is called_____ CO1- U

   (a) DAG (b)Flow graph (c) control graph (d) Hamiltonion graph

PART – B (5 x 3= 15Marks)

6.	Illustrate the language processing system.	CO1- U
7.	Draw the syntax tree of the statement a=a+b*(e/f) Draw the syntax tree of the statement a=a+b*(e/f)	CO2- App
8.	Draw the quadruple structure for the following statement x= -a*b+-a*b.	CO2- App
9.	What are the fields of activation record?.	CO4- U
10.	What is common sub expression?	CO5- U

PART – C (5 x 16= 80Marks)

11.	(a)	Illustrate the process of compilation for the program segment s= n*(n-1) with a neat sketch.	CO2-App	(16)
		Or		
	(b)	Obtain DFA for the regular expression (l(l/d)*	CO2-App	(16)
12.	(a)	Design a predictive parser for the following grammar and also and parse the string (a) S→ a | ↑| (T) T →T, S | S	CO2- App	(16)
		Or		
	(b)	Construct SLR parser for the following grammar and parse the string cdcd. S→CC C→cC C →d	CO2- App	(16)
13.	(a)	Explain in detail the various representation of intermediate code.	CO1-U	(16)
		Or		
	(b)	Explain in detail the different representation of three address code	CO1-U	(16)
14.	(a)	What is Activation Record in stack allocation and explain each field in it.	CO1- U	(16)
		Or		
	(b)	Describe in detail about Heap Management	CO1- U	(16)
15.	(a)	Explain the principal sources of optimization in detail.	CO1-U	(16)
		Or		
	(b)	Describe peephole optimization with necessary examples	CO1-U	(16)