Sardar Patel Institute of Technology

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(Autonomous College Affiliated to University of Mumbai)

Reexamination Synoptic
January 2019

Max. Marks: 100	Duration: 3 hrs
Class: T.E.	Semester: VI
Course Code:CPC601	Branch: COMP
Name of the Course: System Programming and Compiler Construction	

Instructions:
(1) All Questions are Compulsory
(2) Draw neat diagrams
(3) Assume suitable data if necessary

Question No.	Question	Max. Marks	CO
Q1 (a)	Write five distinguishing points between compilers and interpreters. Explain the working of phases of compiler with neat diagram. Synoptic:- Any five valid distinguishing points - 5 marks Correct working of compiler with neat diagram - 5 marks Please specify correct labels to the boxes showing phases of compiler OR	10	CO3
	Write a short note on operator precedence parser with the help of Example. Synoptic:- Defination of operator grammar - 2 marks Correct explanation of operator precedence parser with example 8 marks	10	CO3
Q1 (b)	Consider the following grammar. $S \rightarrow AA$ $A \rightarrow aA \mid b$ i. Draw state transition diagram of LR(0) automaton. ii. Construct LR(0) parsing table. iii. Parse input string "aabb". Synoptic:- Correct state transition diagram with proper label, proper dot positions - 4 marks Parsing table with correct entries - 3 marks Parsing of input string - 3 marks	10	CO3
Q2 (a)	Construct LL(1) parsing table for the following grammar. where S is a start symbol. $S \rightarrow i E t S S_1 \mid a$ $S_1 \rightarrow e S \mid \epsilon$ Synoptic :- Finding correct first sets : - 3 marks Finding correct follow sets :- 3 marks Correct parsing table :- 4 marks	10	CO3

Q2 (b)	What do you mean by DAG ? Explain with example. Synoptic: Definition and concept of DAG : 4 Marks Example of DAG : 6 Marks	*10*	CO4

Q3 (a)	Explain the use of Assembler. Explain structure of POT and MOT and its uses.
	Synoptic:- use of assembler : 2 marks
	    Structure of POT and use : 4 marks
	    Structure of MOT and use : 4 marks
		10	CO2

Q3 (b)	With reference to IBM 360/370 explain with example following instruction format (i) RR (ii) RX (iii) SS (iv) SI Synoptic: For each format 2.5 marks * 4 = 10 marks	*10*	CO2

Q4 (a)	What is the use of Macro-processor ? Explain the use of AIF and AGO along with the example.
	Synoptic:- Use of Macro-processor : 2 marks
	    Use of AIF with example: 4 marks
	    Use of AGO with example: 4 marks
		10	CO2

Q4 (b)	Explain the design of Absolute loader along with example
	Synoptic:- Design of absolute loader - 4 marks
	    Example of absolute loader – 6 marks
	        OR
	With reference to Direct linking loader , Explain the structure and use of ESD cards , and RLD cards
	Synoptic:- structure and use of ESD Cards – 5 marks
	    Structure and use of RLD Cards – 5 marks
		10
		
		10
			CO1
			
			CO1

Q5 (a)	What do you mean by 3 address code statements? Explain any 4 forms of 3 address codes.
	Synoptic: Definition of 3 address code statements – 2 marks
	    Any four forms of 3 address code statements – 8 marks
	        OR
	Explain the concept and role of Code Optimization in compiler designing. Explain peephole optimization along with example.
	Synoptic: Concept and role of Code optimization - 5 marks
	    Example of peephole optimization – 5 marks
		10
		
		10
			CO4
			
			CO4

Q5 (b)	What are the different storage allocation strategies? Explain any two strategies.
	Synoptic:- Listing allocation strategies - 2 marks
	    For each allocation strategy – 4 marks * 2 = 8
	        OR
	What do you mean by Back patching ? Explain with example
	Synoptic:- Concept of Backpatching – 2 marks
	    Example of Backpatching – 8 Marks
		10
		
		10
			CO5
			
			CO5