

April - May 2024

(B.Tech / M.Tech.) Program: B.Tech-Computer

CEC601

Examination: TY Semester: VI

Exam: 15/05/24

Duration: 02.5 Hours

Max. Marks: 60

Instructions:				
(1) All questions are compulsory.				
(2) Draw neat diagrams wherever applicable.				
(3) Assume suitable data, if necessary.				
		Max. Marks	CO	BT level
Q 1	Solve any six questions out of eight.	12		
i)	Define the role of preprocessor with an example.	2	CO1	U
ii)	Explain Format of Assembly Language Statement.	2	CO2	U
iii)	Explain relocating loader with example.	2	CO4	U
iv)	Differentiate Macro Assembler and Macro Pre-Processor.	2	CO3	U
v)	Use following grammar and identify leftmost and rightmost derivation for string:- $a+b*c$ $E \rightarrow E+E$ $E \rightarrow E*E$ $E \rightarrow a/b/c$	2	CO5	AP
vi)	Explain the process of lexical analysis for following code. <pre>int main() { // 2 variables int a,b; a = 15; return 0; }</pre>	2	CO5	Ap
vii)	What are the functions of a macro processor?	2	CO3	U
viii)	What criteria should meet for code optimization?	2	CO6	U
Q.2	Solve any four questions out of six.	16		
i)	For the following piece of assembly language code show the contents of Symbol table and literal table. <pre>START      202            MOVER   AREG,='5'            MOVEM  AREG,='A' LOOP      MOVER   AREG, A            MOVER   CREG, B            ADD    CREG,='1'            MOVEM  CREG,B            SUB    CREG,A            BC     ANY NEXT            LTORG            ADD    CREG,B</pre>	4	CO2	AP

April – May 2024

(B.Tech / M.Tech.) Program: B.Tech-Computer

Examination: TY Semester: VI

Date of Exam: 15/05/24

Duration: 02.5 Hours

Max. Marks: 60

	NEXT	BC SUB BC STOP ORIGIN MULT	LE LOOP AREG,='I' LT,BACK 219 CREG,B			
	A BACK B	DS EQU DS END	LOOP I			
ii)	Explain design issues of macro processor.			4	CO3	U
iii)	Remove left recursion from the following grammar. S->Aa /b A->Ac/ Sd /e			4	CO5	AP
iv)	State the rules to identify leaders in the basic block. Identify the basic block and flow graph for given code. begin while a > b do begin x=y+z a=a-b end x=y-z end			4	CO6	Ap
v)	Identify FIRST and FOLLOW for following given grammar. S → ACB   Cbb  Ba A → da   BC B → g   ε C → g   ε			4	CO5	AP
vi)	Explain “General loading scheme” with advantages and disadvantages.			4	CO4	U
Q.3	Solve any two questions out of three.			16		
i)	Define code optimization. State various strategies for code optimization.			8	CO6	U
ii)	List the phases of the compiler. Discuss the action taken by every phase of the compiler on the following string. A=B+C*60			8	CO3	AP
iii)	Explain the working of two pass macro processor with neat flowchart and databases.			8	CO2	U
Q.4	Solve any two questions out of three.			16		
i)	Explain Triple and Quadruple with respect to TAC. Show the Triple and Quadruple for the following statement a := b * -c + b * -d			8	CO6	AP

K. J. Somaiya Institute of Technology, Sion, Mumbai-22  
(Autonomous College Affiliated to University of Mumbai)

April - May 2024  
(B.Tech / M.Tech.) Program: B.Tech-Computer  
Examination: TY Semester: VI  
Date of Exam: 15/05/24 Duration: 02.5 Hours Max. Marks: 60

ii)	Draw and explain basic flowchart of Single pass Assembler.	8	CO2	U
iii)	Construct SLR(1) parsing table for the following grammar: S → AB   gDa A → ab B → dC C → gC D → fD Clearly show the set of LR(0) items.	8	CO5	AP

\*\*\*\*\*