TE/CMPN/SEM-VI/C-2019/DEC. 2022

(3 Hours)   **Total Marks: 80**

N.B: (1) Question No. 1 is compulsory.
       (2) Attempt any three questions out of the remaining five questions.
       (3) Figures to the right indicate full marks.
       (4) Make suitable assumptions wherever necessary.

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Q.1.	A.	Differentiate between Application Software and System Software.	5
	B.	What are the functions of a Loader? Enlist the loader schemes.	5
	C.	Explain Macro and Macro Expansion with example.	5
	D.	Compare Bottom-Up and Top-Down Parser.	5

Q.2.   A.   Explain with flowchart design of two pass assembler.   **10**

        B.   Construct Three address code for the following program   **10**

```
For(i=0;i<10;i++)
{
If (i<5)
a=b+c*3;
else
x=y+z;
}
```

Q.3.   A.   Explain different features of macros with suitable example.   **10**

        B.   Design LL(1) parsing table for the given grammar: **10**

$S \rightarrow Ad$

$A \rightarrow aB \mid BC$

$B \rightarrow b$

$C \rightarrow e \mid \varepsilon$

Also state that whether the given grammar is LL(1) or not.

Q.4.   A.   Explain the working of a Single-pass macro processor with neat flowchart.   **10**

        B.   What are the different ways of representing Intermediate code? Explain with suitable example.   **10**

Q.5.   A.   Explain different issues in code generation phase of compiler.   **10**

        B.   Construct DAG for the following expression   **10**

$x = m+p/q - t + p/q *y$

Q.6.   A.   Explain Direct Linking Loader in Detail.   **10**

        B.   Explain the different phases of a compiler with suitable example.   **10**

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15311   **Page 1 of 1**