MCA
SEM III
System Software
Subject Code: 2630005

Que 1		Provide answers to following with proper justification	
	A	From the following, which and when can be used to identify a valid string? 1. Derivation 2. Reduction	02
	B	How much memory will be allocated by the statement A1 DS 500	02
	C	Any one of the data structures named POOLTAB and LITTAB can be used to process literals from an assembly program by the assembler. [State TRUE/False with justification]	02
	D	Which of the following statement is correct? 1. Static pointer can be used to access non – local variables 2. Dynamic pointer can be used to access non – local variables	02
	E	Specify the use of Debug monitors and Editors	02
	F	What effect will forward reference have on the processing on symbols	02
	G	Explain the use of Production with a proper example	02
Que 2	A	1. List and explain all the data structures of PASS 1 of an assembler	04
		2. Define Translated origin, Linked origin, load origin	03
	B	Explain the following statements with respect to assembly language 1. MOVEM 2. MOVER 3. COMP 4. EQU	07
		OR	
	A	1. Compare Variant – I and Variant – II	04
		2. Explain the need of address translation	03
	B	Explain the following statements with respect to assembly language 1. BC 2. LTORG 3. END 4. STOP	07

Que 3 A Given the following macro, note down the entries in all the required data structures of Pass I of macro preprocessor 07

```
MACRO ADDTOM &X, &Y, &R=CREG
        LCL &M
.LBL1 M SET 0
        MOVER &R, &X
        ADD &R, &Y
        MOVEM &R, &M
MEND
```

B List the steps involved in pass I of a macro preprocessor 07

OR

A Explain the following with respect to macros 07

1. Expansion time variables
2. Keyword parameters
3. Default parameters
4. Sequencing symbols
5. AIF, AGO and ANOP
6. REPT
7. IRP

B List the steps involved in pass II of a macro preprocessor 07

Que 4 A Discuss the design of an editor. Explain all types of editors 07

B Show the operator precedence matrix for the operators +, *, (and) 07

OR

A What are debug monitors? What useful significance do they carry in software? 07

B Differentiate between top – down parsing. Explain when backtracking comes in to the scene and how it can be resolved? 07

Que 5 Explain the following:

1. Difference between pure and impure interpreter 02
2. Absolute loader 02
3. Strength reduction 02
4. Frequency reduction 02
5. Triples and quadruples 02
6. Available expression and live variables 02
7. Various calling conventions 02

OR

A List the various types of grammar with proper examples 07

B Given the following grammar, state whether the string 07

|- <id>+<id>*<id> -| is valid or not, using LL(1) parser.
[Show the parsing table and parsing steps]

E := TE’
E’ := +TE’ | null
T := VT’
T’ := *VT’ | null
V := <id>