

Seat No. : _____

AB-144

April-2018

M.Sc. (CA & IT) Integrated : Sem.-VI

System Software

Time : 3 Hours]

[Max. Marks : 100

1. Attempt following : (any **four**) **20**

- (1) Explain fundamental of language processing.
- (2) What is software tool ? Explain one of the software tool.
- (3) Explain use of extended stack in block structure.
- (4) Define language translator.
- (5) Draw DFA and STT for identifier and comment string in C++ or JAVA.

2. Attempt following : (any **four**) **20**

- (1) Differentiate between strategy entry point of block device driver and read and write entry point of character device driver.
- (2) Given the following source program. Show the contents of symbol table at end of assembler Pass 1.

	START	100
A	DS	3
L1	MOVER	AREG,B
	ADD	AREG,C
	MOVEM	AREG,D
D	EQU	A+1
L2	PRINT	D
	ORIGIN	A-1
C	DC	'5
	ORIGIN	L2+1
	STOP	
B	DC	'19'
	END	L1

- (3) Explain all advance assembler directives with example.
 - (4) Generate IC according to variant I and variant II for the following code :

```
START 700
A DS 1
MOVEM AREG A
MOVER CREG B
B DS 3
END
```
 - (5) Explain memory allocation of literals using Littab and Pooltab with example.
3. Attempt following : (any **four**) **20**
- (1) Compare compiler and interpreter.
 - (2) Explain types of macro definition statements.
 - (3) Explain data structure used in macro pre-processor.
 - (4) Explain AIF,AGO and ANOP.
 - (5) Explain design of Macro assembler.
4. Attempt following : (any **four**) **20**
- (1) Explain Top-down parsing without back tracking using suitable grammar.
 - (2) Explain call by value result, call by reference and call by name with suitable example.
 - (3) Determine evaluation order for operators of an expression using RR labelling, $a + b * c + d * e \uparrow f$.
 - (4) Explain with example frequency reduction and strength reduction.
 - (5) Explain use of "Available expression" and "Live variable" with proper example.
5. Attempt following : (any **four**) **20**
- (1) Explain Compile & Go, Direct linking loader and general loader scheme.
 - (2) Explain components of object module like header, program, Relocation table & linking table.
 - (3) Explain self-relocating program, on-relocatable program and relocatable program.
 - (4) Explain program linking algorithm with suitable data structure.
 - (5) Explain use of EXTRN and ENTRY statements with suitable examples.