

Seat No. : _____

AK-103

April-2025

Int. M.Sc., (CA & IT), Sem.-VI

System Software

Time : 2:30 Hours]

[Max. Marks : 70

1. Answer the following :
 - (a) Attempt any **two** : 10
 - (1) Explain benefit, property of IR with figure.
 - (2) Explain front end operation of compiler with example.
 - (3) Write a short note on language processor.
 - (b) Attempt any **one** : 4
 - (1) Define Language Translator, De-translator.
 - (2) Define Preprocessor, Language migrator.

2. Answer the following :
 - (a) Attempt any **two** : 10
 - (1) Explain various data structure used in Assembler Pass I and II with example.
 - (2) Explain Types of device Drivers with figure.
 - (3) Generate intermediated code for below content.

```
START 101
MOVEM AREG A
LOOP MOVER AREG A
MOVER CREG B
BC ANY NEXT
NEXT SUB AREG A
LAST STOP
BC LT LOOP
A DS 1
ORIGIN NEXT+2
B DS 1
BACK EQU LOOP
END
```
 - (b) Attempt any **one** : 4
 - (1) Explain function of init(), open(), strategy(), read() entry point.
 - (2) Explain Imperative statements and Declaration statements with example.

3. Answer the following :

(a) Attempt any **two** :

10

- (1) Explain use and field of following tables of a macro with example KPDTAB, MDT, EVTAB, SSTAB, MNT.
- (2) Explain positional parameters, keyword parameters and default value parameters for macro.
- (3) Explain overview of interpreter.

(b) Attempt any **one** :

4

- (1) Explain Advance macro facilities with example.
- (2) Write a short note on Debug monitors.

4. Attempt any **two** :

14

(1) Parse following string using given parse table.

id * (id + id)

	id	+	*	()	\$
E	TE'			TE'		
E'		+TE'			ϵ	ϵ
T	FT'			FT'		
T'		ϵ	*FT'		ϵ	ϵ
F	id			(E)		

(2) Explain LEX & YACC.

(3) What is operator precedence parsing ? Show operator precedence matrix for following operators : +, *, |-, -|.

Parse following string :

| - <id> + <id> * <id> - |

5. Attempt any **two** :

14

- (1) What is program relocation ? How relocation is performed by linker ? Explain with example.
- (2) Explain in detail, how the linker resolves the external references ?
- (3) Explain : (i) absolute loader, (ii) compile and go loader, (iii) direct linking loader.