

Total number of printed pages-3

53 (IT 404) SYPR

2021

SYSTEM PROGRAMMING

Paper : IT 404

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

Answer **any five** questions.

1. (i) Answer in short : 3×5=15
- (a) Identify the components of the Instruction : A1, 901 (2, 15)
- (b) Consider the value of register 5 is 1000. Calculate the address of storage operand for the given instruction :

0101	1010	0011	000	0101	0000	0001	0000
------	------	------	-----	------	------	------	------

- (c) What do you mean by Mnemonic, give example ?
- (d) What do you mean by Symbol Table ?

Contd.

- (e) What are the roles of Location Counter (LC) and Instruction Register (IR)?
- (ii) Discuss the various data formats available in 360 structure. 5
2. (i) Discuss the general machine structure of a conventional computer system considering IBM 360 structure. 10
- (ii) Illustrate with micro flowchart, the sequence of hardware operations performed to execute in instruction ADD 2, L76 in IBM 360 structure. 10
3. (i) Define the functionalities of an assembler. Discuss the role of symbol table and base table considering all fields. 10
- (ii) Show the intermediate steps in a two-pass assembler to assemble the following program : 10

	START	0
	USING	*, 15
	L	1, Five
	A	1, Four
	ST	1, TEMP
Four	DC	F'4'
Five	DC	F'5'
TEMP	DS	1F
	END	



-
4. (i) Discuss various Basic Instruction Formats available in 360 structure with proper examples. 10
- (ii) Define Memory, Registers, Data, Instruction and Operational Code. 2×5=10
5. (i) What is a Loader? Discuss the functionalities of Absolute Loader and Relocating Loader with suitable examples. 10
- (ii) Discuss with suitable example, how arguments in MACRO provides more flexibility in assembly language program than basic MACRO. 10
6. Write short notes on: **(any four)** 5×4=20
- (i) Linker
- (ii) MACRO
- (iii) Compiler
- (iv) Compile-and-go loader
- (v) Operating System.



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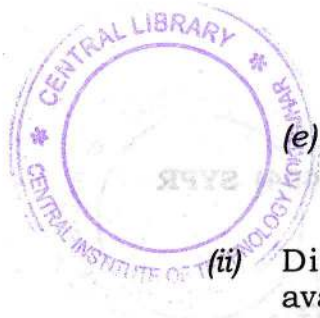
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