53 (IT 404) SYPR
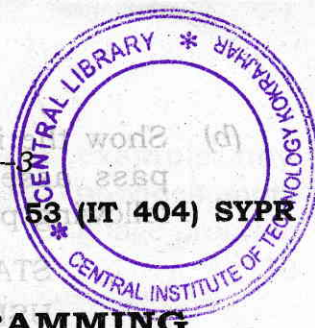
2019

SYSTEM PROGRAMMING

Paper : IT 404 (Back)

Full Marks : 100

Time : Three hours

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

*Answer **any five** questions.*

1. (a) Discuss the general machine structure of a conventional computer system considering IBM 360 structure. 10

   (b) Illustrate with micro flowchart the sequence of hardware operations performed to execute the instruction ADD 2, 176 in IBM 360 structure.

   10

2. Discuss various instruction and data formats available in IBM 360 structure. Give proper example for each. 20

3. (a) Define the functionalities of an assembler. Discuss the role of symbol table and base table considering all fields. 10

(b) Show the intermediate steps in a two pass assembler to assembling the following program :   10

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

4. (a) What is a Loader ? Differentiate the functionalities of Absolute Loader and Relocating Loader with suitable examples.   10

(b) What is the role of Compiler ? Explain various phases of compiler with proper examples.   10

5. (a) Define MACRO call, MACRO definition and MACRO processor. Explain how conditional MACRO differs from basic MACRO.   10

(b) Discuss with proper example how arguments in MACRO provides more flexibility in assembly language program than basic MACRO.   10

6. Write short notes on :   5×4=20

(a) Compile-and-Go loader

(b) Assembly language

(c) Operating system

(d) Direct-linking loader.

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