

Total number of printed pages-3

53 (CS 501) SYPR

2021

SYSTEM PROGRAMMING

Paper : CS 501

Full Marks : 100

Time : Three hours

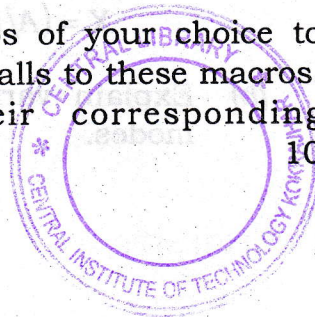
The figures in the margin indicate full marks for the questions.

Answer any five questions.

1. (a) Discuss von Neumann machine architecture in detail. 10
- (b) Discuss Instruction Cycle State Diagram. 10
2. (a) For the given expression, write three and one address instructions.
$$X = (A/B) * (C + D)$$
 10
- (b) Explain various types of addressing modes. 10

Contd.

3. (a) Explain various states of language translation from high level to machine code. 10
- (b) Explain different assembly language statements with example. 10
4. (a) Write an assembly language program to find the factorial of an integer ($N!$). 10
- (b) Write variant I form of the intermediate code of assembly statements obtained in Q. 4. (a). 10
5. (a) Explain analysis and synthesis phase of an assembler by clearly stating their tasks. 10
- (b) Describe following data structures : 10
- OPTAB, SYMTAB, LITAB and POOLTAB
6. (a) Define *two* macros of your choice to illustrate nested calls to these macros. Also show their corresponding expansion. 10



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- (b) Describe the role of linker and loader and their types. 10
7. Write short notes on following : 20
- (i) Compiler and various states of compiler
 - (ii) Advanced Assemble Directives
 - (iii) Self-relocating program
 - (iv) Dynamic Memory Allocation.

