QP CODE: 24804143

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Reg No : .....

Name : .....

I.M.C.A DEGREE EXAMINATION, JULY 2024

Fourth Semester

Faculty of Technology and Applied Sciences

Integrated MCA

Core - IMCA4C03 - SYSTEM SOFTWARE

2020 Admission Onwards

1A8BC237

Time: 3 Hours Maximum: 75 Marks

Part A

*Answer any **ten** questions*

*Each question carries **3** marks*

1. Differentiate regular expression and regular language.
2. Describe Types of Grammar.
3. Explain different techniques for turing machine construction.
4. Explain different types of software.
5. Differentiate direct and indirect addressing modes with examples.
6. How are input and output operations performed in SIC and SIC/XE?
7. Explain the data structures used by assembler.
8. What is the need of SYMTAB (symbol table) in assembler?
9. What is relocatable program?
10. What is Program Blocks in Machine Independent Assembler?
11. Explain semantic expansion.
12. What is RB?

(10×3=30 marks)

Part B

*Answer **all** questions*

*Each question carries **9** marks*

13. a) Prove that there exists a DFA for every ε-NFA.

OR

b) Explain any two higher level techniques for Turing machine construction.

14. a) Describe the machine architecture of SIC/XE.

OR

b) Explain SIC programming with suitable examples.

15. a) Discuss the detailed design of pass 2 of a two-pass assembler with algorithm.

OR

b) Explain the concept of program relocation?

16. a) Explain 2 pass Assembler.

OR

b) Explain MS-DOS Linker.

17. a) Explain design of a macro preprocessor.

OR

b) Wire an example for macro and explain.

(5×9=45 marks)