

**A-0855**

**Total Pages : 4**

**Roll No. -----**

**BCA-20**

**System Programming**

**Bachelor of Computer Application (BCA)**

**6<sup>th</sup> Semester Examination 2024(Dec.)**

**Time: 2:00 hrs**

**Max. Marks: 70**

**Note :** This paper is of Seventy (70) marks divided into Two (02) Section A and B. Attempt the questions contained in these sections according to the detailed instructions given therein. Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.

**P.T.O.**

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## **Section-A (Long-Answer-Type Questions)**

Note : Section 'A' contains Five (05) long-answer-type questions of Nineteen (19) marks each. Learners are required to answer any Two (02) questions only.

[2x19=38]

- Q.1. Discuss how a computer program is executed. What are the fundamental steps involved in language processing? Explain in detail.
- Q.2. Explain the concept of code optimization in a compiler. Discuss techniques such as frequency reduction and elimination of common subexpressions.
- Q.3. Discuss the architecture of Intel 8088 and its implications on assembler design.
- Q.4. What are the functions of lexical analysis in a compiler? Illustrate the process with an example.
- Q.5. Explain the working principle of direct-linking loaders. What are the main functions of a Loader?

## **Section-B (Short-Answer-Type Questions)**

Note : Section 'B' contains Eight (08) short-answer-type questions of Eight (08) marks each. Learners are required to answer any Four (04) questions only.

[4x8=32]

- Q.1. What is a symbol table? In which phase an assembler creates a symbol table?
- Q.2. What is the importance of parsing in the compilation process? Explain the steps involved in top-down parsing without backtracking.
- Q.3. Compare and contrast LL(1) parsing with LALR parsing. Provide examples where each is applicable.
- Q.4. What is the parameter passing mechanism? What is the significance of parameter passing in the compilation process?

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- Q.5. Define ambiguity in grammar and explain how it can be resolved.
- Q.6. State the advantages of using YACC in compiler design.
- Q.7. Differentiate between local and global optimization in code compilation.
- Q.8. What do you understand by the classification of Grammar? Briefly discuss type 0, and type 1 Grammar.

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