Total No. of Printed Pages : 4

BCA-20 SYSTEM PROGRAMMING

Bachelor of Computer Applications (BCA-11/16/17) Sixth Semester, Examination-2020

Time Allowed : 2 Hours Maximum Marks : 80

Note: This paper is of Eighty (80) marks divided into Two (02) sections A and B. Attempt the question contained in these sections according to the detailed instructions given therein.

Section-A

(Long Answer Type Questions)

Note: Section-'A' contains Five (05) long answer type questions of Twenty (20) marks each. Learners are required to answer any two (02) questions only. (2×20=40)

P. T. O.

- What is memory allocation? Discuss the static and dynamic memory allocation during compilation of a program.
- 2. Answer the following :
 - (a) Define loader. What is the function of a loader?7
 - (b) What is the purpose of a symbol table? 7
 - (c) What is scanning and parsing? Differentiate between them.
- 3. Answer the following :
 - (a) What do you understand by booting of a machine?7
 - (b) What is a Turing Machine? Explain. 7
 - (c) What is a Lexical Analyzer? Define. 6
- Explain relocation and linking requirements in segmented addressing with suitable examples.

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- 5. Answer the following :
 - (a) Construct a DFA for the regular expression aa*/bb* 7
 - (b) Construct a DFA over $\sum =(a, b)$ which produces not more then 3 a's. 7
 - (c) Draw a DFA for bit strings with at least one 0 and at least one1.

Section-B

(Short answer type questions)

- Note: Section-B Contains Eight (08) short answer type questions of Ten (10) marks each. Learners are required to answer any four (04) questions only. (4×10=40)
- Differentiate between top-down parsing and bottom-up parsing.
- 2. Compare machine language with assembly language.

- 3. Explain symbol table and Mnemoics table with suitable examples.
- 4. Briefly describe recursive descent parsing mechanism taking an example.
- 5. Differentiate between a compiler and an interpreter. Explain the analysis phase of a compiler.
- 6. Answer the following :
 - (a) What is an Opcode? Give a suitable example. 5
 - (b) What is a Token? 5
- 7. What are the different kinds of assembly language statement? Give examples of each statement.
- 8. Describe the concept of subroutine linkages for loader.

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