23U348 (Pages: 2) Name: .....

Reg.No: .....

THIRD SEMESTER B.C.A. DEGREE EXAMINATION, NOVEMBER 2024

(CBCSS - UG)

(Regular/Supplementary/Improvement)

CC19U BCA3 C06 - THEORY OF COMPUTATION

(Computer Application - Complementary Course)

(2019 Admission onwards)

Time : 2.00 Hours Maximum : 60 Marks

Credit : 3

Part A (Short answer questions)

Answer ***all*** questions. Each question carries 2 marks.

1. Define ordered directed tree.
2. Define left cancellations.
3. Write an example of language.
4. Define Type-2 grammar.
5. Design a DFA all strings has substring 00.
6. Define transition systems.
7. Design a NFA all strings ending in 01.
8. Define Mealy Machine.
9. Define regular set.
10. Define derivation tree.
11. What is an ambigous grammar?
12. Define Top down parsing.

(Ceiling: 20 Marks)

Part B (Short essay questions - Paragraph)

Answer ***all*** questions. Each question carries 5 marks.

13. Prove that $\sqrt{11}$ is irrational using proof by contradiction.
14. Explain construction of a dfa for a given regular grammar with example.
15. Explain the Arden's theorem with example.
16. Explain CNF with example.
17. Design PDA ON 1M 0N.

18. Explain Acceptance by PDA with example.

19. Design a turing machine accepting w#wR wϵ (a+b)*

(Ceiling: 30 Marks)

Part C (Essay questions)

Answer any ***one*** question. The question carries 10 marks.

20. Explain in detail Functions and its types with example.

21. Construct the minimized automata with suitable steps.

(1 × 10 = 10 Marks)

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