

22642

M.Tech. 1st Semester (CSE) CBCB Scheme

Examination, December-2018

**MATHEMATICAL FOUNDATION OF COMPUTER
SCIENCE**

Paper- MTCSE 21C5

Time allowed : 3 hours [Maximum marks : 100]

*Note: Attempt five questions in all selecting one from each
unit. Question No. 1 is Compulsory.*

1. Explain the following: 20
- (i) NFA
 - (ii) PDA
 - (iii) Turing machine
 - (iv) Regular expression

Unit-I

2. Give a complete description about Mealy and Moore models. 20
3. Describe the following: 20
- (i) CNF
 - (ii) CFGs

Unit-II

4. Describe in detail about Top Down Parsing and Bottom up Parsing. 20
5. Give a complete description about Push down Automata. 20

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Unit-III

6. Describe in detail about Turing machine. 20
7. Explain the following: 20
- (i) Decidable languages
 - (ii) The Halting Problem

Unit-IV

8. Explain the following: 20
- (i) Primitive Recursive functions
 - (ii) Theory of optimization
9. What do you mean by Reducibility and Computability? Explain in detail. 20

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