Roll No .....

## MCADD-604

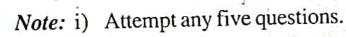
## M.C.A. (Integrated) VI Semester

Examination, November 2019

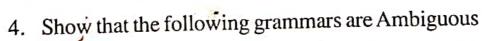
## Theory of Computation

Time: Three Hours

Maximum Marks: 70



- ii) All questions carry equal marks.
- 1. a) What is Alphabet? Define language over an alphabet.
  - b) What is set? List out the operations performed on sets.
- 2. a) Design a DFA which accept the string aba?
  - b) Explain Melay and Moore models.
- 3. a) Write the closure property of Regular Expressions.
  - b) Explain Chomskey classification of a language.



- i)  $S \rightarrow SS/a/b$
- ii)  $S \rightarrow A/B/b, A \rightarrow \alpha AB/ab, B \rightarrow abB/^$
- 5. a) Construct a PDA which accept the set of string over {a, b} with equal number of a's and b's such that all a's and b's are consecutive?
  - b) Explain deterministic and non deterministic PDA.

- 6. What is Turing machine? Explain various types of Turing machine.
- 7. a) Explain Parse Tree with tacking a suitable example.
  - b) Explain decidability and undecidability.
- 8. Write short notes (any three):
  - i) Linear Bounded Automata
  - ii) Halting problem in TM
  - iii) Regular expression and sets
  - iv) Recursive set

\*\*\*\*\*