

## SEM-242

**B. Sc. (Hon's) (Sixth Semester) Examination, June 2021**

**COMPUTER SCIENCE**

*Paper : BSCSH-601*

**(Theory of Computation)**

*Time Allowed : Three hours*

*Maximum Marks : 85*

*Note: Attempt all questions. All question carries equal marks.*

1. Write short notes on the following :
  - (i) NFA to DFA conversion
  - (ii) Minimization of DFA
2. Explain the following in brief :
  - (i) Simplification of CFG
  - (ii) Chomsky normal form
3. Show with example equivalence of push down automata and CFL. Describe construction of PDA corresponding to given CFG.
4. Describe for Turing Machine Construction construct TM for the language  $L = \left\{ \begin{matrix} n & n \\ a & b \end{matrix} \right\}$  where  $n \geq 1$ .
5. Write notes on the following :
  - (i) Primitive recursive functions
  - (ii) P and NP completeness