

B.E. / B.Tech. Computer Science & Engineering (Model Curriculum) Semester-V  
**TEE103CS / FORMALL1 - Formal Language and Automata Theory**

P. Pages : 2



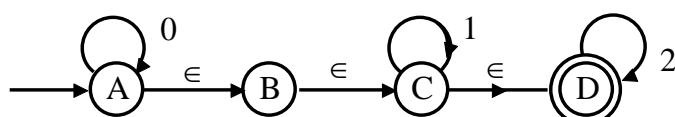
Time : Three Hours

**GUG/S/25/13813**

Max. Marks : 80

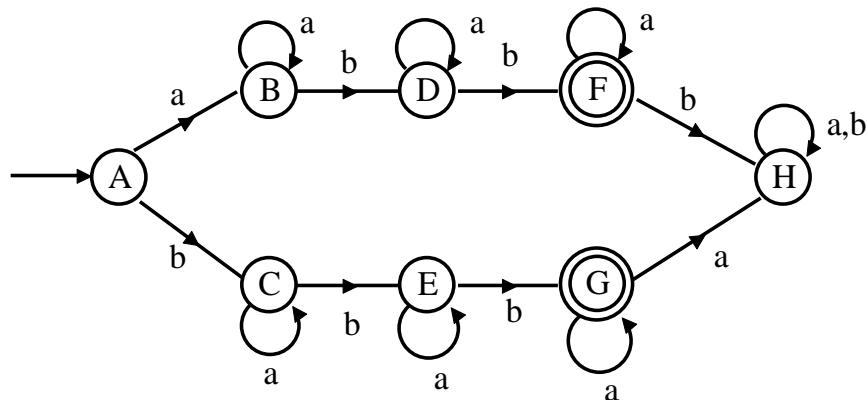
- Notes :
1. All questions are compulsory.
  2. All questions carry equal marks.
  3. Due credit will be given to neatness and adequate dimensions.
  4. Assume suitable data wherever necessary.
  5. Diagrams and Chemical equation should be given wherever necessary.

- 1.** a) What is finite automata? Construct DFA for the language over  $\Sigma = \{a, b\}$  for the set of all strings which ends with 'bba'. 8
- b) Convert the following FA to DFA. 8



**OR**

- 2.** a) Discuss Chomsky Hierarchy in detail. 8
- b) Find the regular expression for the following DFA. 8



- 3.** a) Convert the following grammar to the Chomsky Normal form 8  
 $S \rightarrow ASA \mid aB$   
 $A \rightarrow B \mid S$   
 $B \rightarrow b \mid \epsilon$
- b) Define and design PDA (Push Down Automata) for, 8  
 $L = \{a^m b^n c^n \mid n, m \geq 1\}$

**OR**

