Roll No. | | | | | | | | | | | | **Total No. of Pages : 02**

Total No. of Questions : 18

B.Tech.(CSE) (2011 Onwards) (Sem.–7,8)

THEORY OF COMPUTATION

Subject Code : BTCS-702

M.Code : 71894

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTION TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt ANY FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt ANY TWO questions.**

SECTION-A

Answer briefly :

1. Justify this statement "*L is a subset of closure of alphabet*".
2. Define automation.
3. Acceptability of a string by FA?
4. What is a yield of a derivation tree?
5. What is decidability?
6. Write formal definition of DFA.
7. Define regular expression.
8. Give definition of GNF.
9. List some properties of LR (K) grammars.
10. What is meant by halting problem?

SECTION-B

11. Explain NDPDA and DPDA with the help of example.

12. What do you mean by parsing? How Left most and Right most derivation helps to find out the ambiguity in a grammar?

13. Explain pumping lemma for Context free languages with the help of example.

14. Explain Chomsky classification of Grammars.

15. What are properties of regular languages?

SECTION-C

16. What is a context free grammar and explain closure properties of context free grammar?

17. What are Turing machines? Explain different ways by which we can represent the Turing machines.

18. Write short notes on :

    a. Top Down parsing

    b. LR(K) Grammars

    c. NFA

    d. Recursively enumerable language.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.