Code No: RT22055 **R13** SET - 1

**II B. Tech II Semester Supplementary Examinations, November-2017**
**FORMAL LANGUAGES AND AUTOMATA THEORY**
(Computer Science and Engineering)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answer **ALL** the question in **Part-A**
3. Answer any **THREE** Questions from **Part-B**

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## PART –A

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| 1. | a) | Define FSM. | (3M) |
| | b) | What is regular language? | (3M) |
| | c) | Define DFA with an example. | (4M) |
| | d) | Explain about 2DFA. | (4M) |
| | e) | What are the properties of mealy and moore machine. | (4M) |
| | f) | What is TM and what is the role of TM's? | (4M) |

## PART -B

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| 2. | a) | What are the components of Finite state automata? Discuss. | (8M) |
| | b) | Differentiate between FSS and FSM. | (8M) |
| 3. | a) | What is a string? What operations can be performed on strings? Explain. | (8M) |
| | b) | Define context sensitive language with example. | (8M) |
| 4. | a) | Differentiate between NFA with Є moves and NFA without Є moves with examples. | (12M) |
| | b) | What is NFA? What are the advantages of NFA? Discuss. | (4M) |
| 5. | a) | Given the regular expression (11+0)*. Convert into NFA. | (8M) |
| | b) | Explain about the procedure for converting the DFA to regular expression | (8M) |
| 6. | a) | How to eliminate unit productions? Discuss with example. | (6M) |
| | b) | Explain about different normal forms with example. | (10M) |
| 7. | a) | Explain P&NP class of languages. | (8M) |
| | b) | What languages are accepted by Turing machines? Discuss. | (8M) |
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