

## Unit:-5

1. Define Turing Machine? Explain about the Model of Turing Machine?
2. Construct a Turing Machine for language  $L = \{ ww^R \mid w \in \{0, 1\}^*\}$ .
3. Construct a Turing Machine for language  $L = \{0^n 1^n 2^n \mid n \geq 1\}$ .
4. Discuss the variants of Turing machines
5. Discuss in brief about church hypothesis?
6. Explain about Universal Turing Machine
7. Explain about recursive and recursively enumerable language
8. Explain the halting problem and demonstrate that it is undecidable
9. Explain in detail about P, NP, NP-complete and NP-hard problems with examples for each.
10. Define Post Correspondence Problem? Explain in brief about PCP with an example?
11. Explain about the Decidability and Undecidability Problems?