FLAT IMP Questions

UNIT-1

1. Define DFA, NFA, Ɛ -NFA with suitable example.
2. Conversion of NFA to DFA.
3. Minimization of DFA.
4. FA with output (Mealy and Moore Machines) with examples.
5. Conversion of Mealy to Moore and Moore to mealy.
6. Conversion of Ɛ -NFA to NFA
7. Design of DFAs and NFAs

UNIT-2

1. Define Regular Expression in detail and List the Identity rules of RE.
2. Conversion of FA to RE.
3. Conversion of RE to FA.
4. Classification of Grammars(Chomsky Hierarchy) with an example for each.
5. Conversion of FA to RG.
6. Conversion of RG to FA.
7. Pumping lemma with examples.

UNIT-3

1. LMD, RMD, Parse Tree.
2. What is ambiguous grammar? Give an example.
3. Problems on Reduced Grammar (Elimination of null productions, unit productions, useless symbols).
4. Problems on CNF.
5. Problems on GNF.
6. Pumping Lemma.

UNIT-4

1. PDA - Definition, model, representation, components.
2. Design of PDAs(Problems)
3. Conversion from CFG to PDA.
4. Conversion from PDA to CFG.
5. Two Stack PDA

UNIT-5

1. TM - Definition, model, representation, Transition Table, Transition Diagram.
2. Design of TMs(Problems)
3. Types of TMs
4. Recursively Enumerable Languages, Decidable and Undecidable Problems.
5. Halting Problem.
6. Post Correspondence Problem(PCP) with an example.
7. P,NP,NP-Hard,NP-Complete.