CT-1
Date: 16 Apr 2022
CSE-22 Time: 40 Mins Marks: 30

1. Define automata. Briefly discus the tradeoff between complexity and computability. **04**

2. Discuss the importance of automata in computer science **06**

3. Consider a finite automata M that has alphabet $\sum = \{1,2,3\}$. M accepts the strings that begins and ends with different symbol. As such strings like 213, 221133, 123 etc will be accepted and strings like 22132, 11331211, 1231 etc will be rejected. Draw the state diagram of M with the formal definition. **10**

4. Consider a finite automata M that has alphabet $\sum = \{a,b\}$. M accepts the strings that contains at least two consecutive a's and does not contain two consecutive b's. Design the M with necessary figure and illustration. **10**