Syllabus for MCA

1. **Discrete Mathematics:** Mathematical logic, Relations, Semi groups and Groups, Coding, Recurrence Relations, Graphs, Language and Finite State Machines.

2. **Algorithms and Problem Solving:** Divide and Conquer Technique, Dynamic Programming, Greedy Technique, Single –Source Shortest Paths, NP-Completeness and the P & NP Classes.

3. **Software Engineering:** SDLC, Software Analysis and Design, Requirement Engineering, Software Project Planning, Software Scheduling and Tracking, Design phase, Software Quality.

4. **Data Structure :** Performance measurement, Sorting Techniques, Searching Technique, Link list Doubly Link List, Circular link list, Multi link list, Stack, Queue, Simple queue, Double ended queue, circular queue, Priority Queue, Hashing, Trees, Heap, Graphs and traversals.

5. **System Programming and Operating System:** Compiler, Assembler, Linker, Loader, Operating system, I/O manager, Fundamentals of Operating System, Process and Thread Management, Concurrency Control, Memory Management, I/O Systems, File systems, Protection & Security

6. **Probability and Statistics:** Frequency Distribution and Measures of Central Tendency, Measures of Dispersion, Skewness and Kurtosis, Correlation and Regression, Testing of Hypothesis, Probability, Random variables, Probability Distributions.

7. **Database management System:** Entity Relation Model, Relational Model, Storage and Indexing, Schema refinement and Normal Forms, Normal Forms, Transaction processing, Security and Authorization.