

List of Subjects and their Syllabus for Entrance Exam

The following subjects are for Computer Science students:

- (i) Discrete Mathematics
- (ii) Data Structures and Algorithms
- (iii) C programming
- (iv) Computer Organization

The following subjects are for Electronics and Communication Engineering

- (i) Data communications or Digital Signal Processing
- (ii) Data Structures and Algorithms
- (iii) C programming
- (iv) Computer Organization

Note: One optional subject related to the research area.

Evaluation: If a student opts for the optional subject, then his/her performance will be assessed against 5 subjects, otherwise 4 subjects.

Syllabus

Discrete Mathematics: Logic, Sets, Relations, Functions, Graphs

Data structure and algorithms: Linear ADTs – Stacks, Queues, List, Priority Queue ADT - Heaps, Non-Linear ADTs – Trees and Graphs, Searching and Sorting

Computer Organization: Fixed point and floating point representation, Binary Arithmetic (addition, subtraction, multiplication, division), Cache memory

C programming: Input/Output statements, Selection (IF/Switch Case) and Repetition Statements (For/While loop).

Data communications: Introduction, Data and signals, Digital Transmission, Bandwidth utilization: Multiplexing and spreading, Transmission media, Switching, Error detection and correction, Multiple access, Ethernet, Logical addressing, Internet protocol, TCP, UDP.

Digital Signal Processing: Signals and Systems, transformations, filters, processor architectures, 2-D signal processing.