M.Sc. Admission Test Question 2016-17
Department of CSE

Discrete Mathematics

- Verify the statement: Every integer n>=14 can be expressed as summation of 3s and 8s.
- The sum of 9 non-negative integers is 83. Prove that there is at least one integer with value at least 10.

Structured Programming Language (C)

- Write a program in C which removes leading and trailing whitespaces (tab, space, newline) from a given string. No library functions.
- Write a recursive function in C to print the digits of an integer. No library functions.

OOP (C++, JAVA)

- Why is synchronization required Min JAVA? How you can implement it?
- Multiple choice questions on OOP properties.

Digital Logic Design

- 4 variable K-map
- Design a synchronous modulo 12 counter using T flipflops

Data Structures

- In-order and pre-order traversal given. Task was to construct the binary tree.
- How to implement a queue using two stacks?

Algorithms

- Pseudocode of heap-sort
- Checking a string if it is palindrome using queue and stack

TOC + Compiler

- Write a regex to detect a string that contains alphanumeric characters. Each numeric character is followed by non-zero even alphabetic characters.
- Why is intermediate code generation step used between syntactic analysis and synthesis phase of compilation

Database

- A very easy ER diagram and table conversion
- Constructing B+ tree with some given data

Computer Architecture

- Fill in the blanks type question on pipelining hazards. Basically, on detecting types of hazards.

- A diagram (SAP-1) was given. Two operations were being executed simultaneously. The task was to detect a hazard and providing a solution to it.

Software Engineering + ISD

- Waterfall Model
- Expected Time Calculation using CPM
- Write down the name of 6 UML diagrams. Give a sketch of a class diagram
- True/False questions on design patterns and few things

OS

- State diagram of a LINUX process
- Page table size is less : benefits and demerits.

Microprocessor & Microcontroller

- What is a superscalar processor? Give an example
- What is the difference between a microprocessor and microcontroller?

Networks

- A network address is given. (a) find the subnet mask (b) How many nodes can be connected (c) what will be the subnet mask if maximum no. of nodes was 25?
- A very easy question. Kind of IP classification based on regex type IP addresses.

AI

- What is the purpose of first order predicate logic in artificial intelligence?
- Why IDA* search cannot give optimal solution?