

# MCA 5<sup>TH</sup> SEM. ASSIGNMENT

## COMPUTER NETWORK

### PART-A

- Q 1- Explain how routing and switching is done in ATM Networks.
- Q 2- Differentiate between Classful addressing and classless addressing. Explain how classless addressing results in decrease in the table size.
- Q 3- Write the importance of Time Division Multiplexing (TDM). What are the applications of TDM ? Also write its disadvantages (if any).
- Q 4- Discuss the differences between IPv4 and IPv6. Also highlight the need of IPv6.
- Q 5- Draw and explain connection establishment and termination in TCP using the three-way handshaking method.

### PART-B

- Q 1- Differentiate between circuit switching and virtual circuit. Also explain the effect of router failure in virtual circuits.
- Q 2- Write short notes on the following :
- (a) RSA
  - (b) Fiber Optic Cables
  - (c) OSI Model
  - (d) CSMA/CD

# Network Security & Cryptography

## PART-A

Q 1- How does TCP manage "out-of-order" segment problem ? Explain through illustration..

Q2- Why does FTP use two TCP connections ? Also briefly explain the working of FIT.

Q3- Differentiate between POP and IMAP protocols.

Q4- What is DNS ? Compare between primary DNS and secondary DNS.

Q5- Describe the different security levels, implemented in SNMP.

## PART-B

Q1- how is the "Disc User" checked in Linux ? Explain with the help of an example.

Q2- What are the data types defined by socket interface ? Also explain the purpose of any four.

OR

Q3- Write any four differences between TCP/IP and OSI model. Also draw the layer diagram of each, showing the mapping of OSI and TCP/IP layers.

# **Software Engineering**

## **PART-A**

Q 1- Explain the typical phases of SDLC and corresponding development CASE tools.

Q2- How do 4GL's help to solve problems ? Also mention their limitations, if any.

Q3- Explain the role and functions of a System Analyst in the overall project development.

Q4- how does a product differ from a process ? Discuss the qualities of both.

Q5- Define GUI and explain its components. Also explain the significance of GUI in the overall User Interface designs of any project.

## **PART-B**

Q1- With the help of an example, explain "Iterative Enhancement Model". Suggest for which kind of projects can we use this paradigm.

Q2- Identify and elaborate all the risk factors in a software project.

# Software Testing

## PART-A

Q 1- With the help of an example, explain the component based software engineering process.

Q2- Discuss the phases of Software Development Life Cycle with the help of an example project.

Q3- Differentiate between Cohesion and Coupling. Also explain three different types of coupling and cohesion with a suitable example for each.

Q4- Define Software Metrics. List and explain the parameters for software measurement.

Q5- Explain the significance of CASE Repository. What are its contents? Comment on each one of them. Also, briefly describe the two primary segments of it, (i) Information repository, and (ii) Data dictionary.

## PART-B

Q 1- With the help of an example program segment, explain Mutation Testing.

Q2- Write short notes on the following :

- (a) Prototyping Model
- (b) Boundary Value Analysis
- (c) COCOMO Model
- (d) Regression Testing.

# Image Processing

## PART-A

Q1- What are the problems faced in Superscalar architecture ? Explain how these problems were addressed and resolved in VLIW architecture.

Q2- Define permutation network using an example. Also discuss Perfect Shuffle permutation and Butterfly permutation.

Q3- What is a Parallel Virtual Machine ? Discuss its features and advantages.

Q4- Differentiate between Threads and Processes. Explain the concept of Thread with basic methods in concurrent programming languages for creation and termination of threads.

Q5- Discuss the PRAM model. Which PRAM model can be used to execute any other PRAM algorithm and how can it be used ?

## PART-B

Q1- What are the different models of distributed systems ? Also discuss various advantages of distributed systems.

Q2- Why are Array processors called as SIMD array computers ? Explain the architecture of SIMD array processor using a block diagram.