Software Engineering [Important]

→ SDLC (S/w development life cycle)

→ Models : Waterfall , Prototype , Spiral , Evolutionary Development, Iterative Enhancement.

→ SRS , E-R Diagram , DFD , IEEE Standards for SRS.

→ S/w Maintenance & its types

→ COCOMO in detail

→ Risk Analysis & Maintenance

→ Black box Testing & White box Testing [Difference]

→ Coupling & Cohesion

→ Top-Down & Bottom-up design

Data Compression [Important]

THEORY

→ Data compression & compression techniques (Lossy & Lossless)

→ Information Theory and Models: Physical , Probability , Markov , composite source .

→ Applications of Hoffman coding.

→ Scalar Quantization v/s Vector Quantization

→ Adaptive Quantization v/s Non-Uniform Quantization

→ Applications of LZW (file compression , Image compression, compression over Modems).

NUMERICALS / ALGORITHMS

→ Uniquely decodable code , prefix code

→ Golomb codes , Rice codes , Tunstall code , Huffman Tree , find Huffman code & average code length numerical.

→ LZ77 , LZ78 , PPM , BWT algo.

→ Linde - Buzo - Gray algo.

Computer Networks (Important)

→ TCP/IP & OSI Model.

→ Theory of Networks , Network devices & components, Topology

→ Basic Internet working

→ Logical addressing, Routing algorithms and Protocols, congestion control algorithms.

→ TCP v/s UDP.

→ FTP, Network Management, www & HTTP, cryptography

→ Error Detection and Correction, flow control in Link layer.

* Cover all the essential numericals with above topic.