Course No: MCA-5EL6
Course Title: Network Security & Cryptography

Unit I

Basics: Introduction, Protocol Structure Specification and Modeling: Validation Models, Correctness requirements, Protocol Design, FiniteState machines

Unit II

Conformance Testing, Synthesis and validation: Conformance Testing, Protocol Synthesis, Protocol Validation,

Unit III

Mechanics of Routing Protocols, Internet working with Dissimilar Protocols, Future of Routing,
Protocol designing: Simplicity VS flexibility VS Optimality, Overhead and scaling, Operation above Capacity, forward compatibility, Migration: Routing Algorithms and addressing parameters, making multi protocol operation possible, Robustness, determinism VS Scalability, performance for correctness

Unit IV

Design Tools: A protocol Simulator, A Protocol Validator, using the validator,
Network Security: Features Security in Wireless, Adhoc and Sensor Networks,

References:

1. William Stalling ," cryptography and Network Security", Pearson Education
2. Interconnections: Bridges, Routers switches and Internet-working protocols
   Radia Perlman (Pearson education)
2. IP Routing Fundamentals Mark Sportack (Pearson Education)
3. Design and Validation Computer Protocols : Gerard J. Holzmann (Prentice Hall)