(3 hours) [**80 marks**]

NOTE: Question No 1 is compulsory

Attempt any three questions from remaining.

Assume suitable data if necessary.

Q1. A) Explain in detail hidden and exposed terminal problem in Wireless Network. [**10**]

B) Explain in Issues in Designing a Routing Protocol for Ad Hoc Wireless

Networks and also explain in detail AODV routing protocol. [**10**]

Q2. A) Explain in detail Contention based MAC protocols- with reservation

Mechanism. [**10**]

B) Explain design goal of a transport layer protocol for ad hoc wireless network. [**10**]

Q3. A) Give comparison between IEEE 802.11a, 802.11b, 802.11g. [**10**]

B) What are the various attacks on MANET? Explain attacks on MANET. [**10**]

Q4. A) Explain the security issues in ad hoc wireless networks [**10**]

B) Explain in detail Dynamic Source Routing protocol with example? [**10**]

Q5. A) Describe data link layer solutions to calculate the optimum transmission range. [**10**]

B) Explain the tree based and mesh based multicast routing protocols. [**10**]

Q6. Write a short note on following. [**20**]

A. TORA

B. MANET vs VANET

C. Characteristics of the Wireless channel.

D. 802.11p