Time: 3 hours   **Max. Marks: 80**

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N.B.: 1) Question No.**1** is **compulsory**.
      2) Attempt any **THREE** questions out of remaining **FIVE** questions.
      3) **Figures** to the **right** indicates **full** marks.
      4) Assume suitable data if **necessary**.

Q1   **20**
a   What are applications of Ad Hoc Wireless Networks? Explain.
b   Discuss the challenges that a design engineer faces while designing a routing protocol for an ad hoc wireless network.
c   What are the objectives of transport layer protocol. Which protocol is used for ad hoc networks?
d   Differentiate between different kind of sensor network architectures.

Q.2
a   List and explain different issues in ad hoc wireless network.   **10**
b   Differentiate between cellular networks and ad hoc wireless network.   **10**

Q.3
a   Draw and explain diagram of the ad hoc wireless Internet.   **10**
b   Give classification of MAC protocols with respect to mobile network. Explain any one protocol that best suited for ad hoc wireless network.   **10**

Q.4
a   Explain in detail the major reasons behind throughput degradation that TCP faces when used in ad hoc wireless networks.   **10**
b   Discuss issues and challenges in security provisioning in an ad hoc wireless network.   **10**

Q.5
a   What is the need for energy management in ad hoc wireless networks? Explain.   **10**
b   Explain in detail sensor network architecture.   **10**

Q.6   **Write short notes on any FOUR**   **20**
a   Classification of routing protocols based on routing information update mechanism.
b   Hidden and exposed terminals
c   Network layer attack in wireless network
d   HyperLan
e   Data Dissemination Wireless Sensor Network
f   Battery Management Schemes

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