**Total No. of Questions : 8]** **SEAT No. :**

**P489** **[Total No. of Pages : 2**

# [6003]-710
# T.E. (Information technology)
# COMPUTER NETWORK AND SECURITY
# (2019 Pattern) (Semester - II) (314451)

***Time : 2½ Hours]*** ***[Max. Marks : 70***

***Instructions to the candidates:***

1) ***All Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume suitable data if necessary.***

***Q1)*** a) Explain MACAW protocol in details. **[9]**

b) Explain with diagram Layered Architecture for Sensor Network. **[9]**

OR

***Q2)*** a) Explain the issues in designing a routing protocol for Ad-hoc Wireless Network. **[6]**

b) What are hidden station and exposed station problem in WLAN. **[6]**

c) Explain different issues and Challenges in Designing a Sensor Network. **[6]**

***Q3)*** a) What is stream cipher? Explain encryption process using stream cipher with suitable example. **[8]**

b) What is Cipher Block Chaining (CBC)? Explain the process of CBC with suitable diagram. **[9]**

OR

***Q4)*** a) Describe the following network security threats. **[5]**

i) Unauthorized access
ii) Distributed Denial of Service (DDoS) attacks

b) Describe the following fundamental principles of Information security **[6]**

i) Integrity
ii) Authentication
iii) Authorization and Access Control

c) What is Cipher Feedback Mode(CFM) and Electronic Code book (ECB)? **[6]**

***P.T.O.***

***Q5)*** a) Explain Data Encryption Standard Algorithm in detail with suitable diagram. **[9]**

b) Explain Diffie-Hellman key exchange algorithm. **[9]**

OR

***Q6)*** a) Explain Private Key Management. **[9]**

b) Explain following terms. **[9]**

i) PKIX Model
ii) Digital Signature
iii) Digital Certificate

***Q7)*** a) Write a short note on Software attacks & hardware attacks with example. **[8]**

b) Explain the threats and vulnerabilities of the information security system. **[9]**

OR

***Q8)*** a) Explain Layers of Cyber Security in detail. **[8]**

b) What is a man-in-the-middle attack (MIM)? Explain in detail. **[9]**