Exam.Code:0999
Sub. Code: 7299

2023

M.E. (Computer Science and Engineering)

First Semester

CS-8103: Advance Computer Networks

(Common with ME Computer Science Cyber Security)

(For UIET Only)

Time allowed: 3 Hours **Max. Marks: 50**

NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Section.

x-x-x

1. (i) Consider the delay of pure ALOHA versus slotted ALOHA at low load. Which one is less and why?
   (ii) When we use audio/video on demand, which of these three types of multimedia communication takes place: streaming stored audio/video, streaming live audio/video, or real-time interactive audio/video?
   (iii) With IPv6 protocol, does the ARP protocol changed? If yes, are the changes conceptual or technical?
   (iv) What is the difference between a hard handoff and a soft handoff?
   (v) What is the significance of Virtual connection Identifier (VCI)? 10

SECTION-A

2. (i) In the TCP/IP protocol suite, what are the identical objects at the sender and the receiver sites when we think about the logical connection at the application layer?
   (ii) An IP fragment has arrived with an offset value of 100. How many bytes of the data were originally sent by the source before the data in this fragment? Explain 10

3. Explain the significance of 3 layers of OpenFlow's SDN architecture. Why many SDN applications are using OpenFlow architecture? 10

4. (i) An IPv6 consists of the base header and a TCP segment. The length of data is 320 bytes. Show the packet and enter a value for each field.
   (ii) Distinguish between a time-out event and the three-duplicate ACKs event. Which one is a stronger sign of congestion in the network and why? 10

SECTION-B

5. (i) Briefly describe how the following security attacks can be defeated: packet sniffing, packet modification and IP Spoofing? 5
   (ii) Differentiate between core network and radio access network in 3G and 4G cellular data architecture? 5

6. Explain the following:
   (i) Working Principles of RFID Tags
   (ii) L2CAP layer in Bluetooth 10

7. What are the major issues and challenges of MANETs. Describe the effect of each in designing various protocols for real time application. 10

x-x-x