2123

M.E. (Computer Science and Engineering)
First Semester
CS-8103: Advance Computer Networks
(For UIET only)
(Common with ME Comp. Sci. (Cyber Security), CSN 8102)

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt <u>*five*</u> *questions in all, including Question No. 1 (Section-A) which is compulsory and selecting one question each from Section B- C.*

x-x-x

SECTION-A

Q1.
(i) Give the advantages of spread spectrum over a fixed-frequency transmission?
(ii) How is the flow label used in the IPv6 frame?
(iii) Differentiate between Foreign agent care of address and Co-located care of address?
(iv) Explain how in particular, wired networks and adhoc wireless networks differ based on routing.   10
(v) Which authentication and access grant protocols/algorithms are used for user equipment in GSM network at each step?

SECTION-B

Q2.
(i) What is I-TCP? How does I-TCP isolate problems on the wireless link?   5
(ii) What is the Neighbor Discovery protocol in IPv6 networks? How does it support stateless address autoconfiguration?   5

Q3.
(i) What is handover in mobile communication and why is it necessary? What is the impact of handover latency on real-time applications?   5
(ii) Explain the difference between:
(a) Hard handover and Soft handover
(b) Layer 2 handover and Layer 3 handover   5

Q4.
(i) What is OpenFlow, and how does it relate to SDN?   5
(ii) How does SDN contribute to network automation and explain SDN orchestration   5

SECTION-C

Q5.
(i) How does WiMAX handle multiple users and traffic in its network? What are the advantages of using WiMAX in rural or underserved areas?   5
(ii) What is the read range of RFID technology and how can it be extended? How is RFID used in healthcare applications?   5

Q6.
(i) What is meant by a binding cache? What are the general problems of mobile IP regarding security and support of quality of service?   5.
(ii) Draw GPRS network architecture. Explain the role of the Serving GPRS Support Node and GPRS Radio Network Controller.   5

Q7.
(i) Explain and compare the working mechanism of both Destination Sequence Distance Vector and Dynamic Source Routing Protocol when applied on a mobile adhoc network scenario.   5
(ii) With respect to VANETs, answer the following questions:
(a) Contribution of On-Board Units (OBUs) in communication
(b) Role of a Certificate Authority (CA) in security   5

x-x-x