

POKHARA UNIVERSITY

Level: Bachelor

Semester: Spring

Year : 2016

Programme: BE

Full Marks: 100

Course: Computer Network

Pass Marks: 45

Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Attempt all the questions.

1. a) What is client server network architecture? How it is more secure than peer-to-peer networks? 7
- b) What are the reasons for using layered protocols? Explains the functions of various layers in OSI reference model. 8
2. a) Compare copper wire and fiber optics with respect to the transmission speed, installation/maintenance, security, cost effectiveness, reliability and flexibility. 8
- b) What are the factors that cause congestion? Explain Leaky bucket and token bucket traffic shaping. 7
3. a) How ISDN interfaces and channel works? 7
- b) Explain the use of Medium Access Control and Logical Link Control over LAN architecture. 8
4. a) Explain and draw a typical cell format of an ATM cell. What is the impact of cell payload in ATM network performance? 5
- b) What are the principles of using symmetric key and public key Cryptography? Explain any one of public key techniques. 5
- c) Differentiate between HTTP and HTTPS protocol. 5
5. a) Why we need subnet? If the given IP-address of a network is 192.168.10.0/25, then calculate the number of subnets and number of hosts per subnet. 8
- b) Discuss about sliding window protocol. Describe mechanism of CSMA/CD along with its application area. 7
6. a) What is Routing Metrics? Explain different protocols used by Interior Gateway Protocols and Exterior Gateway Protocols of IP-Routing Protocols. 6
- b) Why do we need port addressing even though we have local address? Explain about TCP and UDP services and header format. 5
- c) Explain the functionalities of switches, router, bridges, and repeaters. 4
7. Write short notes on: (**Any two**) 2×5
 - a) VPN
 - b) DNS
 - c) CIDR