POKHARA UNIVERSITY

Level: Bachelor | Semester: Fall | Year : 2017
Programme: BE | Full Marks: 100
Course: Computer Networks | 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) Explain different topological models in computer network. 8
   b) Discuss the TCP/IP protocol stack with a suitable example. Also Compare TCP/IP with OSI 7
2. a) Explain the terms bandwidth, throughput and latency. Explain the working principle of satellite communication system. 7
   b) Compare circuit switching and packet switching. Draw necessary diagram to illustrate. 8
3. a) Explain channel access mechanism in CSMA/CD. 8
   b) What is Error Control? Show how Forward Error Control (FEC) technique will help to detect and correct the error 7
4. a) Explain HTTP protocol. Describe the difference between SMTP, POP and IMAP servers 7
   b) The existing network of Pokhara University (172.31.255.0/22) is to be divided into network of 4 different schools. Among 5 schools two schools need to be subdivided into 4 different departments. Provide a complete IP Address Plan which includes Network Address, Broadcast Address, Usable IP Pool, Subnet Mask and Wildcard Mask. 8
5. a) Explain the difference between distance vector routing and link state routing. 7
   b) What is the role of UDP protocol? Discuss TCP and UDP socket in terms of data transmission and security. 8
6. a) What is Virtual Circuit Switching? Explain how Routers build routing table using RIP. 7
   b) Explain public key cryptography. Explain Diffie-Hallman key exchange. 8
7. Write short notes on: (**Any two**) 2×5
   a) Virtual Private Networks
   b) Email Server Protocl: SMTP,POP, IMAP
   c) TCP socket