POKHARA UNIVERSITY

Level: Bachelor Semester: Spring Year : 2019
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) Define Computer Network. Briefly explain the different types of network model. 7
   b) Why do you need layered Architecture in network? Compare OSI model with TCP/IP model. 8
2. a) Define transmission media. Explain different types of transmission media in detail. 7
   b) What do you mean by framing? List the different framing technique and illustrate bit stuffing with an examples. 8
3. a) Explain the working principle of selective repeat ARQ and point out the merit and demerit of it over Go-Back –NARQ. 7
   b) You are given IP Address 150.152.0.0. you need to subnet the given IP into five different Departments. Perform the subnetting and find the subnet mask, Network Address, Broadcast address and usable host address in all subnet. 8
4. a) Explain IPV4 Header format? Differentiate between IPV4 and IPV6. 7
   b) What is socket address and communication? Explain the services provided by the transport layer. 8
5. a) What is congestion? Briefly explain different types of technique for Traffic shaping. 7
   b) What is SSL? Explain how a request initiated by a HTTP client is served by a HTTP srever. 8
6. a) What is network security? How can firewalls enhance network security? Explain how firewalls can protect a system. 7
   b) Compare symmetric key encryption method with asymmetric key encryption. Encrypt the message "READ" using RSA algorithm. 8

7. Write short notes on: **(Any two)** 2×5
   a) Circuit switching and packet switching
   b) Email server protocol: SMTP
   c) VPN