POKHARA UNIVERSITY

Level: Bachelor | Semester: Fall | Year : 2019
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) Define Converged Networks. Discuss the merits and demerits of Computer Networks with a suitable example. 7
   b) What do you mean by Routing device? Explain design issues of layers. 8
2. a) Explain twisted pair cable on basis of Categories, Connector used, Performance and Application along with its suitable diagram. 8
   b) What are the functions of LLC and MAC sub-layer? Discuss different farming approaches used in data link layer. 7
3. a) What is Error Correction? Show how FEC technique will help to detect and correct the error with suitable example. 8
   b) Explain the frame format of IPV4 with a suitable diagram. 7
4. a) Differentiate between adaptive and non-adaptive routing. Explain about any intra-AS routing protocol. 8
   b) Pokhra University has 3 sub division located at Pokhara as head office, Kathmandu as Examination office and Biratnagar as Contact office with 125, 60 and 29 hosts respectively. Now you as network administrator design the network with below details. 7
      i. All the LANs must implemented router as default Gateway.
      ii. Ensure that network is secure from inside and outside the network.
      iii. Calculate *Broadcast, Network, usable address along with subnet and wild card mask*
      iv. ISP provide IP address was 10.0.17.0/24
5. a) Differentiate TCP and UDP with a suitable example 8
   b) What do you mean by congestion and source of congestion? Explain 7

traffic shaping in detail.

6. a) Discuss the role of DHCP. Explain the operation of DNS in corporate Networks. 8

   b) What do you mean by Network security? Explain the operation of Data Encryption Standard Algorithm. 7

7. Write short notes on: **(Any two)** 2×5

   a) Integrated Services Digital Network

   b) UDP-Connection less

   c) Virtual Private Networks