C.U.SHAH UNIVERSITY
Winter Examination-2018

Subject Name: Computer Networks

Subject Code: 4TE05CNW1   **Branch: B.Tech (CE,IT)**

Semester: 5   **Date: 28/11/2018**   **Time: 10:30 To 01:30**   **Marks: 70**

Instructions:
  (1) Use of Programmable calculator & any other electronic instrument is prohibited.
  (2) Instructions written on main answer book are strictly to be obeyed.
  (3) Draw neat diagrams and figures (if necessary) at right places.
  (4) Assume suitable data if needed.

Q-1   **Attempt the following questions**   **(14)**
  a) What are the three criteria necessary for an effective and efficient network?
  b) What is the need of port numbers?
  c) What do you mean by ARP?
  d) Why TCP services are called Stream delivery services?
  e) What are the services offered by network layer?
  f) Write difference between Switch and Hub.
  g) What are the types of class full addressing?
  h) What is mean by Ethernet?
  i) What are the salient features of IPv6?
  j) Define Topology.
  k) What are the issues in data link layer?
  l) List Framing Method.
  m) Write full form of HTTPS and DHCP.
  n) How can the routing be classified?

Attempt any four questions from Q-2 to Q-8

Q-2   **Attempt all questions**
  a) Draw the layered architecture of OSI reference model and write at least two   **(07)**
  services provided by each layer of the model.
  b) Differentiate the following: **(07)**
   (i) Connection Oriented Services with Connection Less Services
   (ii) Virtual circuit with Datagram subnet

Q-3   **Attempt all questions**
  a) Enlist various collision free protocols. Explain any one in detail with example.   **(07)**
  b) Apply Manchester and differential Manchester encoding on following bit pattern   **(07)**
  10110111.

Q-4   **Attempt all questions**
  a) What is cyclic redundancy check? Show the calculation polynomial code   **(07)**
  checksum for a frame 1101011011 using the generator x^4+x+1.

b) What do you mean by guided transmission media? Enlist various guided media used for data transmission. Explain co-axial cable in detail. **(07)**

Q-5 **Attempt all questions**

a) Explain distance vector and Link State routing mechanism with example. **(07)**

b) Describe the working of sliding window protocol. Also explain the piggybacking phenomenon **(07)**

Q-6 **Attempt all questions**

a) Discuss and list the congestion prevention policies at data link, network and transport layers that can affect the congestion **(07)**

b) Explain a protocol Using Go Back N strategy using pipelining and show the scenario in the case of **(07)**
• when receiver' window size is 1 and
• when receiver' window size is large

Q-7 **Attempt all questions**

a) What is the role of Domain Name Server (DNS) in Internet? Explain the hierarchy of various domain names. **(07)**

b) Explain Different types of Switching methods with examples. **(07)**

Q-8 **Attempt all questions**

a) Explain the working of electronic mail protocols SMTP, IMAP and POP3 in brief with suitable diagram **(07)**

b) Explain the following techniques for achieving good quality of service. **(07)**
 (i) Traffic shaping (ii) Leaky bucket algorithm