COMILLA UNIVERSITY

Department of Computer Science & Engineering

3rd Year 2nd Semester B.Sc.(Engg.) Final Examination-2016 (Session: 2013-2014)

Course Code: CSE-328 **Course Title:** Computer Networks

Full Marks: 60 **Time:** 3 Hrs.

(Answer any **five** from the following questions)

1. a) What is the OSI model of ISO? Explain how two computers can exchange information using the OSI model. 5

   b) Make a list of the service primitives for implementing a simple connection-oriented service 4

   c) Distinguish between TCP and UDP. 3

2. a) Show the comparison between LED and semiconductor laser. 2

   b) Mention the key difference between an artificial satellite and real satellite. 2

   c) Define Public Switched Telephone Network (PSTN). Draw the structure of a telephone system and explain its major components. 1+4=5

   d) Compare between circuit switched and packet switched networks. 3

3. a) 'The data link layer has a number of specific functions'-discuss the function. Show the relationship between packets and frame. 2+1=3

   b) Describe the following framing techniques: 2+2=4

      (i) Flag bytes with byte stuffing.

      (ii) Starting and ending flags, with bit stuffing.

   c) Define sliding window protocol. Explain a simplex stop-and-wait protocol. 4

   d) What is piggybacking? 1

4. a) Find the error of the following IP address **111.56.045.78** and **75.45.301.14** 2

   b) Change the following IP address from binary notation to dotted-decimal notation. 2

      10000001 00001011 00001011 11101111

   c) Given the network address **132.21.0.0**, find the class, the block, and the range of the addresses. 3

   d) A company is granted the site address 201.70.64.0 (class C). The company needs six subnets. Design the subnets. 3

   e) A company needs **600 addresses**. Which of the following set of class C blocks can be used to form a supernet for this company? 2

      (i) **198.47.32.0 198.47.33.0 198.47.34.0**

      (ii) **198.47.32.0 198.47.42.0 198.47.52.0 198.47.62.0**

      (iii) **198.47.31.0 198.47.32.0 198.47.33.0 198.47.52.0**

      (iv) **198.47.32.0 198.47.33.0 198.47.34.0 198.47.35.0**

5. a) Describe the processes used in reliable data transport (rdt) protocol. 3

b) How channel bit error and duplicate packets are handled in rdt 2.0? 3

c) Describe the NAK free protocol used in rdt 2.2 protocol. 3

d) With state diagram discuss the rdt 3.0 protocol used in channels with losses and errors. 3

6. a) What is Bluetooth technology? Explain the Bluetooth architecture. Name five Bluetooth profile. 4

b) What is WDMA protocol? Explain the basics of this protocol using example. 4

c) How Classless Inter Domain Routing (CIDR) addressing principle solves the problem of address exhaustion. 4

7. a) Mention five service primitives for a simple transport service. 2

b) What is Tunneling? Describe Three-way handshaking method with figures. 1+2=3

c) Define socket. Write down the socket primitives for TCP. 1+2=3

d) Explain the relationship between NSAP, TSAP and Transport Connection. 4

8. Write short notes on (Answer any four): 3*4=12

a) DNS

b) WWW

c) Bluetooth

d) Electronic Mail

e) E-Commerce