No. of Printed Pages : 3

BIELE-016

B.Tech. – VIEP – ELECTRONICS AND COMMUNICATION ENGINEERING (BTECVI)

00635

Term-End Examination

December, 2014

BIELE-016 : DATA COMMUNICATION AND NETWORK

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any* ***seven*** *questions. All questions carry equal marks. Assume missing data suitably.*

1. (a) What is Open System Interconnection (OSI) model ? Explain OSI reference model with a neat sketch. *5*

(b) Compare Open System Interconnection (OSI) and TCP/IP reference models on the basis of their inherent properties. *5*

2. What is Sliding Window Protocol ? Explain one-bit Sliding Window Protocol with a neat diagram. *10*

3. (a) What is the minimum overhead to send an IP packet using Point to Point Protocol (PPP) ? Count only the overheads introduced by PPP itself, not the IP header overhead. *5*

(b) What is the significance of network layer ? Explain and compare 'Virtual Circuits' and 'Datagram' subnets. *5*

4. What are the disadvantages in 'Leaky Bucket' algorithm and how can 'Token Bucket' algorithm give a flexible solution to them ? Explain your views in detail. *10*

5. (a) A network on the Internet has a subnet mask of 255.255.240.0. What is the maximum number of hosts it can handle ? *5*

(b) Explain concatenate virtual circuits of virtual circuit subnets is detail. *5*

6. Write short notes on the following : *2×5=10*

(a) Internet Multitasking

(b) Mobile IP

7. A large population of ALOHA users manages to generate 50 requests/sec, including both originals and retransmission. Time is slotted in units of 40 m sec.

   (a) What is the chance of success on the first attempt ?

   (b) What is the probability of exactly 'K' collisions and then a success ?

   (c) What is the expected number of transmission attempts needed ? *10*

8. What is the general principle of congestion control ? Explain congestion control in case of virtual-circuit-subnet with a neat sketch in detail. *10*

9. Write short notes on the following : *2×5=10*

   (a) ATM Architecture

   (b) Stop and Wait flow control technique

10. Why does UDP exist ? Would it be possible to place the Real-Time Transport Protocol (RTP) code in the operating system Kernel, along with 'User Datagram' Protocol (UDP) code ? Explain your answer. *10*