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BICSE-006

DIPLOMA – VIEP – COMPUTER SCIENCE AND ENGINEERING (DCSVI)

00393

Term-End Examination

December, 2016

BICSE-006 : ELECTIVE-COMPUTER NETWORKS

Time : 2 hours *Maximum Marks : 70*

Note : *Answer **five** questions in all. Question no. **1** is **compulsory**. All questions carry equal marks.*

1. (a) Sketch the Manchester encoding for the following bit stream : *4*

11000111

(b) Find CRC for the data polynomial $X^9 + X^7 + X^3 + X^2 + 1$ with the generator polynomial $X^3 + X + 1$. *10*

2. (a) What are the desired characteristics of a routing protocol ? Give the steps in determining the shortest path between two nodes using 'Bellman-Ford' algorithm. *10*

(b) Why is bit-stuffing needed in data link protocols ? Bit-stuff the following data frame : *4*

0001111111001100011111111100

3. (a) Explain the following TCP/IP header fields : *10*

(i) Urgent pointer

(ii) Sequence number

(iii) Fragment offsets

(iv) Type of service

(v) Source port

(b) What are the reasons for having a minimum length frame in Ethernet ? Explain. *4*

4. (a) What is the use of Network Allocation Vector (NAV) in IEEE 802.11 WLAN protocol ? *6*

(b) How does TCP 3-way handshake mechanism handle the following situations ? *8*

(i) Delayed arrival of SXN Packet

(ii) Delayed SYN and ACK

5. (a) Explain the use of binary exponential back-off algorithm in CSMA/CD protocol. *7*

(b) How are fragmentation and reassembly implemented in IP ? *7*

6. (a) What are the different commands used to copy files between FTP clients and FTP servers ? Write the syntax and use of any of these commands. *8*

(b) Explain the purpose of the following IP addresses : *6*

(i) 255.255.255.255

(ii) 0.0.0.0