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CS-09

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ADCA / MCA (II Yr)

Term-End Examination

June, 2010

CS-09 : DATA COMMUNICATION AND NETWORKS

Time : 3 hours *Maximum Marks : 75*

Note : *Question number **1** is **compulsory**. Answer **any three** questions from the rest.*

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1. (a) Differentiate between Datagram subnet and Virtual Circuit. **5**

(b) Write the difference between logical address and physical address. Also, name the layer at which these addresses are mapped in OSI model. **5**

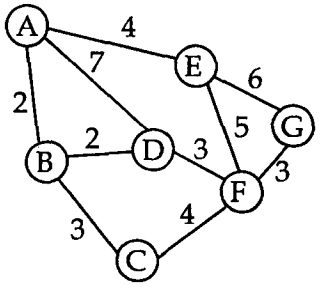
(c) Draw an amplitude modulated waveform. How does it differ from frequency modulated waveform ? When would the amplitude modulation system be preferred and why ? **5**

(d) Draw the diagrams of manchester and differential manchester coding for the following bit sequence. 101101011010 **4**

(e) Explain the differences between simplex, half-duplex and full duplex transmissions. Also give an example for each. **6**

(f) What is meant by 'Congestion' in networks ? Write the reasons of occurring congestion in Networks. **5**

2. (a) For the following network, calculate the shortest path from A node to all network nodes using Dijkstra's algorithm. **10**



(b) Describe and distinguish between FDMA and TDMA giving an example for each. **5**

3. (a) What is Nyquist frequency ? Explain the effect when an analog signal is sampled at less than the Nyquist frequency. **5**

(b) Describe the advantages of ISDN over analog dial-up telephone network. **5**

(c) Write the relative advantages and disadvantages of asynchronous and synchronous modes of data transmission. **5**

4. (a) Compare and contrast CSMA/CD and token passing access methods. 5

(b) What are the role of amplifier, repeater, bridges and routers in network communication ? Identify the OSI layers in which they operate. 10

5. Write short notes on the following : 15

(a) Slotted ALOHA

(b) FDDI

(c) X.25