

Code No: 07A70407

R07**Set No. 2**

IV B.Tech I Semester Examinations, December 2011

COMPUTER NETWORKS

Common to Bio-Medical Engineering, Electronics And Telematics,
 Electronics And Instrumentation Engineering, Electronics And
 Communication Engineering

Time: 3 hours**Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

1. Explain in detail IDEA. [16]
2. (a) How congestion is controlled in V.C. subnets?
 (b) What is Choke packet? How does the choke packets helps in congestion control? [8+8]
3. (a) Discuss circuit switching and packet switching methods. Also discuss their merits and demerits.
 (b) Differentiate between the following:
 - i. bit rate and baud rate
 - ii. single mode fiber and multi mode fiber. [12+4]
4. (a) How will you determine the performance of stop & wait protocol?
 (b) What is piggybacking? What are its advantages?
 (c) A upper layer message is split into 10 frames, each of which has a 80 percent chance of arriving undamaged. If no error control is done by the data link protocol, how many times must the message be sent on the average to get the entire thing through? [5+5+6]
5. (a) Explain the protocol designed for wireless LANs.
 (b) Imagine two LAN bridges, both connecting pair of 802.4 networks. The first bridge is faced with 1000 512-byte frames per second that must be forwarded. The second is faced with 200 4096-byte frames per second. Which bridge do you think will need the faster CPU. Discuss. [8+8]
6. (a) How the complexity at Network layer & Transport layer varies with connection oriented and connectionless service?
 (b) Suppose Network layer provides connection less service, Transport layer connection oriented service, then how reliability is achieved?
 (c) How Virtual circuit is different from Physical connection? [8+4+4]
7. (a) With a neat diagram explain the relation between layers at an interface.

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- (b) Define OSI reference model. Suppose in an arbitrary network as shown in Figure 7b the Host1 communicates with Host2. During the process of communication which layers as per OSI reference model will remain transparent to the nodes A to D and why? [8+8]

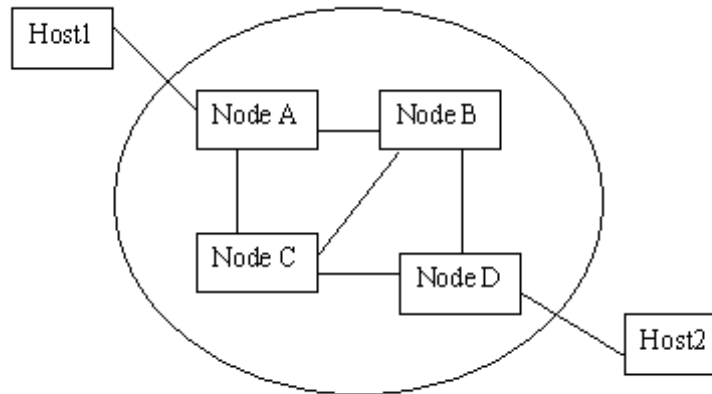


Figure 7b

8. (a) Explain the transport service primitives.
 (b) Imagine that a two-way handshake rather than a three-way handshake were used to set up connections. In other words, the third message was not required. Are deadlocks now possible? Give an example or show that none exist. [8+8]

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1. (a) Explain in detail binary count down collision free protocol.
(b) Give the detailed description of 802.3 frame format. [8+8]
2. Give the format of TCP segment Header and explain its different fields. [16]
3. (a) Explain about ISDN architecture.
(b) Differentiate between optical fiber and coax. [10+6]
4. (a) Compare Circuit switching with Packet switching.
(b) Consider any two networks of your choice which support Circuit switching or Packet switching and explain them in detail.
(c) Explain the strategy that can be used at the receiver to achieve reordering of the packets. [6+6+4]
5. (a) Explain with an example how data can be transmitted using the OSI model.
(b) Explain the format of a Novell Netware IPX packet. [8+8]
6. (a) What is Logical address and Physical address in computer networks? Why a mapping from logical address to physical address and vice versa is required? Explain the protocols which perform it.
(b) Explain Special IP address. [10+6]
7. (a) Discuss the error control technique which is commonly used in data network. What value of N is used in go-back-N ARQ technique used in ARPANET and why?
(b) Imagine that you are writing the data link software for a line used to send data to you, but not from you. The other end uses HDLC, with a 3-bit sequence number and a window size of seven frames. You would like to buffer as many out of sequence frames as possible to enhance efficiency, but you are not allowed to modify the software on the sending side. Is it possible to have a receiver window greater than one, and still guarantee that the protocol will never fail? If so, what is the largest window that can be safely used? [8+8]
8. DNS uses databases. Database can be centralized or distributed. What are the pros and cons of centralized and distributed data base approaches. What type of database DNS actually uses? [16]

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JNTUWORLD

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R07**Set No. 1**

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1. (a) Discuss about character stuffing and bit stuffing framing techniques with examples. Mention their advantages and disadvantages.
(b) Discuss about the simple protocol for a noisy channel. [8+8]
2. (a) What are the advantages of having layered architecture? Mention the layers of ISO-OSI reference model.
(b) What is Internet? Mention some of the applications of Internet. [8+8]
3. (a) How Tunneling helps in connecting two different networks?
(b) How routing in inter-network is different from routing in subnet? [8+8]
4. (a) What is Birthday attack? What is its significance?
(b) What are the implications of network security for individual privacy and society in general? [8+8]
5. (a) Explain about adaptive tree walk protocol.
(b) Explain about binary back off algorithm. [8+8]
6. (a) How TCP connections are established?
(b) Draw the finite state machine diagram for connection establishment of TCP and explain different states of the finite state machine. [6+10]
7. (a) Television channels are 6MHz wide. How many bits/sec can be sent if four level digital signals are used? Assume a noiseless channel.
(b) How does a virtual circuit differ from a physical circuit? What advantages would a virtual circuit provide? [8+8]
8. How buffering at receiver can help in solving out of order delivery of packets? What are the limitations of it? What are the applications for which this strategy is suitable and why? What are the applications for which this strategy is not suitable and why? Explain. [16]

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1. (a) How POP works? What are the advantages of IMAP over POP?
(b) What is the role played by message transfer agent? Explain. [6+10]
2. (a) How flow control at Transport layer is different from flow control at Data link layer?
(b) What is buffering? Give the Pros and Cons of fixed sized & variable sized buffers.
(c) Compare buffering at sender with buffering at receiver. [6+5+5]
3. (a) Discuss about fast Ethernet cabling.
(b) Explain various token bus control frames. [8+8]
4. (a) How RSVP helps in congestion control for multicasting?
(b) How ACK policy at Data link layer affects congestion control? [10+6]
5. (a) What are the different media used in data communication systems? Compare their merits and demerits.
(b) Assume a data stream is made of ten 0's. Encode the stream, using Manchester and differential Manchester coding schemes. How many Changes (vertical line) can you find for each scheme? [8+8]
6. (a) Why is the need for error control at the data link layer?
(b) Discuss about PPP. [8+8]
7. Using Destination originated sequence numbers, Count to Infinity problem can be solved. Discuss in detail how it can be achieved. [16]
8. (a) Compare point -to-point channels with broadcast channels along with suitable examples.
(b) A collection of five routers is to be collected in a point-to-point subnet. Between each pair of routers, the designers may put a high speed line, a medium-speed line, a low-speed line, or no line. If it takes 100ms of computer time to generate and inspect each topology, how long will it take to inspect all of them to find the one that best matches the expected load? [8+8]
