Code No: V3224 **R07** **Set No: 1**

III B.Tech. II Semester Supplementary Examinations, April/May – 2013

COMPUTER NETWORKS

(Common to CSE, IT, E.COMP.E)

Time: 3 Hours **Max Marks: 80**

Answer any FIVE Questions

All Questions carry equal marks

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1. a) What is layered protocol? Briefly describe the design issues of layer protocol.
   b) With a neat diagram, briefly describe 802.11.

2. a) What is ISDN Service? With a neat diagram, describe ISDN System Architecture.
   b) What is frequency hopping spread spectrum? In what way it is different from direct sequence spread spectrum.

3. a) Which hardware device one will use in DLL? Briefly describe services provided by the data link layer to its upper layer.
   b) What is SLIP? Briefly describe the disadvantages of SLIP.

4. a) What is CSMA/CD? With a neat diagram, describe the states of CSMA/CD.
   b) What is frame bursting? Describe about Fast Ethernet and gigabit Ethernet.

5. a) Compare and contrast virtual circuits with datagram subnets.
   b) What is group management? With an example, briefly describe multicast routing.

6. a) What is NAT? Briefly describe the placement and operation of NAT box.
   b) What is congestion? Describe network and transport layer policies that affect congestion.

7. a) What is Nagles algorithm? What is silly window syndrome, how it reduces the TCP performance?
   b) Briefly describe strategies of flow control and buffering.

8. a) What is DNS? Briefly describe principal DNS resource record types of IPv4.
   b) Describe the architecture and services of Electronic mail.

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Code No: V3224 **R07** **Set No: 2**

III B.Tech. II Semester Supplementary Examinations, April/May – 2013

COMPUTER NETWORKS

(Common to CSE, IT, E.COMP.E)

Time: 3 Hours **Max Marks: 80**

Answer any FIVE Questions

All Questions carry equal marks

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1. a) What is the principal difference between connectionless communication and connection-oriented communication?
   b) Two networks each provide reliable connection-oriented service. One of them offers a reliable byte stream and the other offers a reliable message stream. Are these identical? If so, why is the distinction made? If not, give an example of how they differ?

2. a) Compare and contrast Copper wire and Fiber optics transmission media.
   b) With a neat diagram, briefly describe synchronous and asynchronous modes of transmission in ATM networks.

3. a) What is pipelining? Briefly describe the sliding window protocols, which will use pipelining.
   b) What is LCP? What are the packet types of LCP? Briefly describe the frame format of PPP.

4. a) What is time domain reflectometry? With frame formats, briefly describe Ethernet MAC Sublayer Protocol.
   b) What is HR-DSSS? Briefly describe 802.11 physical layer.

5. a) What is head of line blocking? What are the goals of ATM Switches? Briefly describe batcher banyan switch.
   b) What is asynchronous communication? Briefly describe switching and encoding in asynchronous communication.

6. a) What is multi protocol router? With a neat diagram, describe internetworking using concatenated virtual circuits.
   b) What is autonomous system? Briefly describe transparent and non-transparent fragmentation.

7. a) What is SEAL? Briefly describe AAL5 convergence sublayer message format.
   b) Briefly describe TCP timer management.

8. a) What is Name server? Describe how a resolver looks up a remote name.
   b) Briefly describe the four way protocol for releasing a connection.

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Code No: V3224 **R07** **Set No: 3**

III B.Tech. II Semester Supplementary Examinations, April/May – 2013

COMPUTER NETWORKS

(Common to CSE, IT, E.COMP.E)

Time: 3 Hours **Max Marks: 80**

Answer any FIVE Questions

All Questions carry equal marks

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1. a) What does "negotiation" mean when discussing network protocols? Give an example.
   b) Compare and contrast TCP/IP and OSI reference models.

2. a) Why ISDN is require? What is Narrowband ISDN? What is the reason behind introducing broadband ISDN.
   b) What is Nyquist theorem? Is the Nyquist theorem true for optical fiber, or only for copper wire?

3. a) With an example, briefly describe the usage of CRC for Error correction and Detection.
   b) PPP is based closely on HDLC, which uses bit stuffing to prevent accidental flag bytes within the payload from causing confusion. Give at least one reason why PPP uses byte stuffing instead.

4. a) What is DCF? In what way it is related to PCF. Briefly describe 802.11 MAC sub layer protocol.
   b) With frame format, briefly describe 802.11 distribution services.

5. a) Assuming that all routers and hosts are working properly and that all software in both is free of all errors, is there any chance, however small, that a packet will be delivered to the wrong destination?
   b) For hierarchical routing with 4800 routers, what region and cluster sizes should be chosen to minimize the size of the routing table for a three-layer hierarchy?

6. a) What is IPv6? Briefly describe extension headers of IPv6.
   b) What is three bears problem? Briefly describe CIDR.

7. a) What is RTP? With a neat diagram, briefly describe RTP Header.
   b) With a neat diagram, briefly describe the TCP header frame format and briefly describe the process of establishing a TCP Connection.

8. a) What is MIME? Describe RFC822 headers added by MIME.
   b) What is NNTP? Briefly describe URLs.

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Code No: V3224 **R07** **Set No: 4**

III B.Tech. II Semester Supplementary Examinations, April/May – 2013

COMPUTER NETWORKS

(Common to CSE, IT, E.COMP.E)

Time: 3 Hours **Max Marks: 80**

Answer any FIVE Questions

All Questions carry equal marks

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1. a) Briefly describe the required primitives for implementing a simple connection-oriented service.
   b) If the unit exchanged at the data link level is called a frame and the unit exchanged at the network level is called a packet, do frames encapsulate packets or do packets encapsulate frames? Explain your answer.

2. a) What is ADCCP? With a neat diagram, briefly describe HDLC frame for bit oriented protocol. What are the possible variations of control field in HDLC fame format?
   b) Compare and contrast PPP with SLIP.

3. a) Why DLL is divided into two parts? What is CSMA? Briefly describe the variants of CSAM Protocols.
   b) What is Binary Exponential Backoff Algorithm? Describe the process of evaluating performance of Ethernet.

4. a) What is optimality principle? Briefly describe distance vector routing algorithm. Describe the serious drawback distributed bellman ford algorithm.
   b) What is multi destination routing? With an example, briefly describe reverse path forwarding.

5. a) Are there any circumstances when connection-oriented service will (or at least should) deliver packets out of order? Explain.
   b) Which protocol you will suggest to deliver a common message to the registered group and why? Justify your answer.

6. a) What is classful addressing? Is an IPv4 support classful addressing? Briefly describe any four options and option field of IPv4 address frame format.
   b) What is Address resolution protocol? Briefly describe RARP, BOOTP and DHCP.

7. a) What is SCTP? Briefly describe transactional TCP.
   b) What is AAL? With a neat diagram, describe AAL ¾ convergence sublayer message format.

8. a) What is audio compression? Briefly describe Real Time Streaming Protocol.
   b) Describe the architectural overviews of WWW.

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