Code No: 09A51203

R09

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year I Semester Examinations, November/December - 2012
COMPUTER NETWORKS
(Information Technology)

Time: 3 hours

Max. Marks: 75

Answer any five questions
All questions carry equal marks

1.a) How do the layers of the Internet model correlate to the layers of the OSI model? Explain.
 b) What are the responsibilities of the transport layer in the Internet model?
 c) What is the difference between network layer delivery and transport layer delivery?
[15]

2.a) Compare and contrast a circuit-switched network and a packet switched networks.
 b) What is the role of address field in a packet traveling through a virtual-circuit network?
 c) Compare optical fiber cables with coaxial cables. [15]

3.a) Why do we need flow and error control in computer networks?
 b) Give HDLC frame format and explain each field.
 c) Compare block codes with cyclic codes. [15]

4.a) What is the importance of medium control sublayer in OSI model? Explain.
 b) What are various access mechanisms? Discuss.
 c) What is the access mechanism used in wireless LAN? Explain. [15]

5.a) How does a VLAN reduce network traffic?
 b) What are the devices used to connect different LANs? Explain.
 c) How many layers are there in SONET? Explain function of each layer. [15]

6.a) What is the multicast routing? and explain any one of the multicast routing protocols.
 b) Explain why most of the addresses in class A are wasted. Explain why is medium-size or large-size corporation does not want a block of class C addresses. [15]

7.a) Why do we select UDP for voice transmission? Explain.
 b) What is congestion? Explain any one of the congestion control techniques.
 c) How do we provide QoS in switched networks? [15]

8. Write short notes on
a) FTP
b) SNMP
c) Domain Name Space. [15]

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
III B.TECH – I SEM SUPPLEMENTARY EXAMINATIONS, JUNE - 2010
COMPUTER NETWORKS
(Common to CSE, IT)

Time: 3hours   Max.Marks:80

Answer any FIVE questions
All questions carry equal marks
- - -

1.   Write short notes on the following:
  a) Stop-and wait protocol
  b) LCP packets types
  c) ATM cell reception.   [4+6+6]

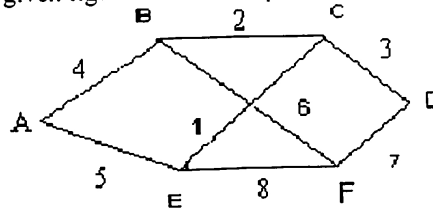2. a) Why the performance is improved if 'ALOHA' is made 'Slotted ALOHA'?
        Discuss with example.
  b) What is a bridge? Mention the six reasons why an organization may end up
        with multiple LANS?   [8+8]

3. a) Explain Dijkstra's shortest path algorithm.
  b) Consider graph given figure below. Compute the shortest path from A to D. [8+8]

4. a) What is inter-networking? Why it is required?
  b) What are the different devices that can be used for inter networking? Explain.
                                                          [8+8]

5. a) What is the purpose of sequence numbers in TCP Segment?
  b) Why padding is required for TCP Segment?
  c) Write short notes on TCP timers.   [4+4+8]

6. a) What are the fields in message header of e mail system?
  b) What are SMTP types & subtypes? Explain them.   [6+10]

7.   Differentiate between the following:
  a) WAN and Internet
  b) Connection oriented service and Connection less service
  c) OSI Vs TCP/IP.   [5+5+6]

8. a) Discuss in detail about space division switches?
  b) With a neat diagram explain ISDN system for home use?   [8+8]

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Code No: 35051

III B.Tech I Semester Supplimentary Examinations, May/Jun 2009
COMPUTER NETWORKS
(Common to Computer Science & Engineering and Information
Technology)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
★ ★ ★ ★ ★

1. (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]

2. (a) How does NRZ-L differ from NRZ-I?
   (b) Differentiate between base band coax and broad band coax? [8+8]

3. (a) Describe the different types of LCP packets?
   (b) A 3000-km long T1 trunk is used to transmit 64-byte frames using sliding window protocol using go-back-N. If the propagation speed is 6 μsec/km, how many bits should the sequence numbers be? [8+8]

4. What is a token? Discuss the protocol of token ring LAN in general. Discuss with example how priority is implemented in a token ring LAN? [16]

5. (a) A source can completely determine the route to the destination. place the route in the packet header and transmit. What are the advantages & disadvantages of this approach.
   (b) Use of cache memory can increase the efficiency of the above approach. Comment. [10+6]

6. (a) What are the major goals of IPv6?
   (b) Give the format of IPv6 Header and explain different fields. [6+10]

7. (a) What are the different flags in TCP segment? Explain each of them.
   (b) How TCP uses sliding window to achieve flow control? [10+6]

8. (a) Explain Diffe-Hellman key exchange.
   (b) How Authentication is implemented using public-key cryptography? [6+10]

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III B.Tech I Semester Supplimentary Examinations, May/Jun 2009
COMPUTER NETWORKS
(Common to Computer Science & Engineering and Information
Technology)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
⋆ ⋆ ⋆ ⋆ ⋆

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2. (a) What is the problem with the knock-out switch? Suggest a solution
   (b) Discuss about the two kinds of light sources used for signaling.   [8+8]

3. (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]

4. (a) Explain about adaptive tree walk protocol?
   (b) Explain about binary back off algorithm?   [8+8]

5. Define Adaptive and Non-Adaptive routing. Classify the routing algorithms in to adaptive and non adaptive type with suitable justifications.   [16]

6. (a) What are the message types used by ICMP? Explain.
   (b) Explain the network protocols:
       i. ARP
       ii. RARP.   [6+10]

7. (a) What is multiplexing? Why multiplexing is required? What is the difference between upward multiplexing and downward multiplexing?
   (b) How to recover from host crashes and router crashes?   [8+8]

8. (a) What are the fields in message header of e_mail system?

(b) What are SMTP types & subtypes? Explain them. [6+10]

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Code No: 117BY

R13

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year I Semester Examinations, March - 2017
COMPUTER NETWORKS
(Common to ECE, EIE, BME)

Time: 3 Hours
Max. Marks: 75

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

Part- A (25 Marks)

1.a) How selective repeat protocol resolves issues of stop and wait protocol? [2]
 b) What are the applications of Infrared waves? [3]
 c) Mention some of the physical properties of Ethernet. [2]
 d) Explain the function of repeaters. [3]
 e) What are the metrics used by routing protocols. [2]
 f) How does netid differ from a network address. [3]
 g) Explain briefly about Crash recovery. [2]
 h) Explain about Packet Fragmentation. [3]
 i) What are the basic functions of email systems? [2]
 j) What are the two main categories of DNS messages? [3]

Part-B (50 Marks)

2.a) Explain about the Coaxial Cable with neat sketch.
 b) What is bit and byte stuffing explain with an example. [5+5]
OR
3.a) Explain the frame format of PPP.
 b) Draw the layered architecture of the OSI reference model and write two services provided by each layer of the model. [5+5]

4.a) Explain the flow diagram of CSMA/CD.
 b) Explain about the source routing bridge. [5+5]
OR
5.a) Explain about channelization protocols.
 b) Explain the categories of standard Ethernet. [5+5]

6. Explain about the Distance Vector routing protocol with an example. [10]
OR
7. Explain about the Link State routing algorithm. [10]

8. Explain about DHCP. [10]
OR
9.a) Explain about CIDR.
 b) Explain about RARP. [5+5]

10. Explain the various fields of the TCP header with the help of a neat diagram.[10]
OR
11.a) Explain about the window management in TCP.
 b) Explain about HTTP request. [5+5]

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Code No: 117BY

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year I Semester Examinations, April/May - 2018
COMPUTER NETWORKS
(Common to ECE, EIE)

Time: 3 Hours   Max. Marks: 75

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART- A

(25 Marks)

1.a)	What is Internet?	[2]
b)	What are the advantages and disadvantages of optical fiber?	[3]
c)	Mention the functions of Hub.	[2]
d)	Explain why there is no need for CSMA/CD on a full duplex Ethernet LAN.	[3]
e)	What is the purpose of subnetting?	[2]
f)	What are the three main elements of distance vector routing algorithm?	[3]
g)	Explain Tunneling.	[2]
h)	Explain the socket primitive of TCP.	[3]
i)	Explain the status codes of HTTP client error.	[2]
j)	Compare HTTP and FTP.	[3]

PART-B

(50 Marks)

2.a)	Explain about the sliding window protocol.	
b)	Distinguish between OSI and TCP/IP reference model.	[5+5]
	OR	
3.a)	Explain about the Go-Back–N ARQ protocol.	
b)	Explain checksum with an example.	[5+5]
4.a)	Explain about CSMA protocols.	
b)	Explain about the spanning tree bridge.	[5+5]
	OR	
5.a)	Explain about the IEEE 802.3 frame.	
b)	Explain about the types of bridges.	[5+5]
6.a)	Explain about the hierarchical routing algorithm.	
b)	Distinguish between connectionless and connection oriented networks.	[5+5]
	OR	
7.a)	Explain how congestion is controlled in network layer.	
b)	Explain the working of Packet Switched Networks.	[5+5]

8.a) Explain the various steps that are followed in releasing a TCP connection.
  b) Explain about ARP.   [5+5]

OR

9.a) Draw a state diagram for simple connection management scheme.
  b) Distinguish between IPv4 and IPv6.   [5+5]

10. Discuss how simple mail transfer protocol works? Can multimedia messages be transmitted using SMTP?   [10]

OR

11.a) Explain about the TCP timer management.
  b) Explain the payload types of Real Time Transport Protocol.   [5+5]

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Code No: 117BY

R13

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year I Semester Examinations, November/December - 2016
COMPUTER NETWORKS
(Common to ECE, BME)

Time: 3 Hours

Max. Marks: 75

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit.
Each question carries 10 marks and may have a, b, c as sub questions.

PART- A

(25 Marks)

1.a)	Write short notes on interfaces.	[2]
b)	Explain the characteristics of twisted pair cable.	[3]
c)	What is the difference between router and gateway?	[2]
d)	What is meant by collision free protocols?	[3]
e)	Mention the design issues of network layer.	[2]
f)	Difference between connectionless and connection oriented networks.	[3]
g)	Explain about CIDR.	[2]
h)	Explain the functions of Transport layer.	[3]
i)	Explain about TELNET.	[2]
j)	Write the application layer paradigms.	[3]

PART-B

(50 Marks)

2.a) Explain the functions of various layers in ISO-OSI reference model.
  b) Explain the term sliding window. Also illustrate and explain the operation of selective repeat. [5+5]

OR

3.a) Discuss about unguided transmission media.
  b) What are the different types of error detection methods? Explain the CRC error detection technique using generator polynomial x^4+x^3+1 and data 11100011. [5+5]

4.a) Explain the operation of source Routing Bridges.
  b) Explain the working of CSMA/CD. [5+5]

OR

5.a) Discuss in brief the MAC frame structure for IEEE 802.3
  b) Explain in detail the operation of pure ALOHA and slotted ALOHA. [5+5]

6.a) Explain the Dijkstra's Shortest Path Routing Algorithm with an example.
  b) Give the general principles of various congestion control algorithm. [5+5]

OR

7. What is Congestion control? How it is implemented in Network Layer? What is the role of Choke packet in managing congestion? [10]

8.a) Explain the error control mechanism in transport layer.
  b) Explain about Reverse Address Resolution Protocol. [5+5]

OR

9.a) How are connection establishment and connection release managed at the transport layer? Explain.
  b) With a neat diagram explain the IPv6 header format. [5+5]

10.a) Compare and Contrast the UDP header and the TCP header.
  b) Explain the client server model. [5+5]

OR

11.a) What is Electronic mail? Explain the two scenarios of architecture of E-Mail.
  b) Explain the TCP service model. [5+5]

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Code No: 117BY

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B. Tech IV Year I Semester Examinations, November/December - 2017
COMPUTER NETWORKS
(Common to ECE, EIE, BME)

Time: 3 Hours   **Max. Marks: 75**

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Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

Part- A

(25 Marks)

1.a)	What is CRC checker?	[2]
b)	Write the advantages of layered architecture of network.	[3]
c)	Define exponential Back off.	[2]
d)	What is piggy backing? How does it useful?	[3]
e)	Write the functions of LLC.	[2]
f)	Write the responsibilities of network layer.	[3]
g)	What is multiplexing? Give different types of multiplexing?	[2]
h)	Write about Tunneling.	[3]
i)	What is DNS? Write its properties.	[2]
j)	Explain MIME header	[3]

Part-B

(50 Marks)

2.a)	Compare TCP/IP and OSI reference model.	
b)	Explain about framing.	[5+5]
	OR	
3.a)	Explain stop and wait protocol.	
b)	Give a detail note on Hamming code.	[5+5]
4.a)	Explain CSMA/CD protocol and how does it detect collision?	
b)	Discuss about switched and fast Ethernet.	[5+5]
	OR	
5.a)	Explain MAC sub layer protocol in detail.	
b)	Discuss about spanning tree bridges.	[5+5]
6.a)	Explain link state routing algorithm in detail.	
b)	Write the optimality principle of routing algorithms.	[5+5]
	OR	
7.a)	Describe hierarchical routing algorithm in detail.	
b)	Write a note on load shedding.	[5+5]

8.a) Explain IPV6 packet format.
  b) Describe fragmentation in internet working with an example. [5+5]
OR
9.a) Explain Address resolution protocol in detail.
  b) Write the principles of network layer in internet. [5+5]

10.a) Explain TCP sliding window protocol.
  b) Give a detail note on HTTP request-response model. [5+5]
OR
11.a) Explain File transport protocol.
  b) Compare TCP and UDP protocols. [5+5]

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