CS/IS74

USN

NEW SCHEME

Seventh Semester B.E. Degree Examination, Dec. 06 / Jan. 07
CS / IS
Computer Networks – II

Time: 3 hrs.] [Max. Marks:100

Note: ***Answer any FIVE full questions.***

1 a. What is domain name system? Show a portion of internet domain name space. **(04 Marks)**

b. What are resource records? Give the syntax of a resource record. What are name servers? **(08 Marks)**

c. Discuss how a resolver looks up a remote name. Give the necessary block diagram. **(08 Marks)**

2 a. In the context of an E-mail, discuss the role of 'user agent'? **(05 Marks)**

b. Discuss why 'MIME' was introduced. Give the composition of 'MIME'. **(05 Marks)**

c. Discuss with necessary diagrams, the message transfer using 'SMTP'. **(10 Marks)**

3 a. Explain the operation of POP3. Discuss the working of IMAP. **(08 Marks)**

b. Discuss the architectural overview of WWW. **(05 Marks)**

c. What are server forms? Discuss the operation of server forms. **(05 Marks)**

d. Can a machine with a single DNS name have multiple IP addresses? **(02 Marks)**

4 a. Explain with examples the concept of:
i) Streaming stored audio and video
ii) Streaming line audio and video
iii) Real time interactive audio and video. **(06 Marks)**

b. Explain three specific functions rendered by media players. **(06 Marks)**

c. Briefly explain the bitrates of audio and video standards which aid in multimedia communication over internet. **(08 Marks)**

5 a. Explain all relevant stages of accessing audio and video through a web server. **(10 Marks)**

b. Explain RTSP with an illustration. **(10 Marks)**

6 a. What are the limitations of best of best effort service? Explain. **(10 Marks)**

b. Explain any two methods of removing audio jitter at receiver end. **(10 Marks)**

7 a. Explain data encryption standard with illustration. **(10 Marks)**

b. What is authentication? Explain some authentication protocols with examples. **(10 Marks)**

8 Write short notes on:
a. Packet sniffing
b. SSL
c. SIP
d. Secure E-mail. **(20 Marks)**

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CS74

Sixth
~~Seventh~~ Semester B.E. Degree Examination, May / June 08

Computer Networks – II

Time: 3 hrs. Max. Marks:100

Note : ***Answer any FIVE full questions.***

1 a. What are DNS name spaces? Explain the top – level domain name space of internet. (08 Marks)

b. What is resource record? Explain the format of resource record. (12 Marks)

2 a. Explain with a diagram server side dynamic web page generation steps. (06 Marks)

b. List the differences between XHTML and HTML 4. (06 Marks)

c. What is HTTP? Name the important properties of HTTP. What are the different methods of HTTP? (08 Marks)

3 a. Explain the three broad classes of multimedia applications. (06 Marks)

b. What are the hurdles for multimedia? (06 Marks)

c. Explain the types of redundancy in video compression. (04 Marks)

d. What are the differences between H . 261 and H . 263. (04 Marks)

4 a. Explain the three limitations of the best - effort service. (06 Marks)

b. With suitable example explain RTSP messages exchanged between media player and server. (08 Marks)

c. Explain multimedia file format. (06 Marks)

5 a. Explain scheduling and policing mechanism used in multimedia applications. (12 Marks)

b. What is SIP? Explain the functions of SIP. (08 Marks)

6 a. What are the desirable properties to secure communication? Explain briefly. (10 Marks)

b. Write a note on DES. (10 Marks)

7 Define the terms and explain the following :

a. Authentication

b. Digital signature

c. RSA algorithm

d. Fire wall. (20 Marks)

8 a. Explain security and administration of S N M P V 3. (10 Marks)

b. Write short notes on :

i) IMAP

ii) RTP. (10 Marks)

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USN | 3 P a P e r Sh ee ts | 06CS64

Sixth Semester B.E. Degree Examination, June-July 2009
Computer Networks - II

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions, selecting at least TWO questions from each part.***

PART – A

1 a. What are datagram and virtual circuits? Distinguish between them. **(10 Marks)**

b. Consider the network in the Fig.1(b).
   i) Use the Dijkstra Algorithm to find the set of shortest path from node 4 to other node.
   ii) Find the set of associated routing table entries. **(10 Marks)**

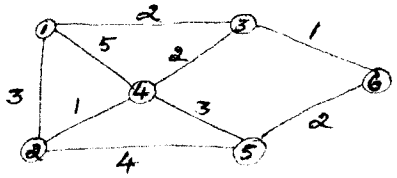

Fig.1(b)

2 a. With a neat diagram explain leaky bucket policy. **(08 Marks)**

b. Explain the following fields in the IP packet header.
   i) Time to live ii) Fragment offset iii) Header checksum. **(06 Marks)**

c. A large number of consecutive IP addresses are available starting at 200.40.160.0. Suppose that 3 organizations A, B & C request 4000, 2000 and 1000 addresses respectively and in that order. For each of these, give the first IP address assigned, the last IP address assigned and the mark in the w.x.y.z/s notation. **(06 Marks)**

3 a. Explain the three way handshake for establishing a TCP connection. **(08 Marks)**

b. Explain in detail, the operation of OSPF. **(12 Marks)**

4 a. With a neat diagram explain the ATM cell header format. **(08 Marks)**

b. Write a short note on AALI. **(06 Marks)**

c. Explain the PNNI signalling with example. **(06 Marks)**

PART – B

5 a. Apply RSA and do the following: i) Encrypt a = 3, b = 11, x = 3 and m = 9.
   ii) Find the corresponding y iii) Decrypt the ciphertext. **(06 Marks)**

b. Explain in detail, any two major categories of threat to network security. **(08 Marks)**

c. Write a short note on SNMP. **(06 Marks)**

6 a. Explain the operation of fair queuing scheduler in context with packet scheduling of integrated service. **(06 Marks)**

b. Explain the various types of resource allocation schemes. **(06 Marks)**

c. Discuss the concept of tunnel and point-to-point protocol in context with UPN. **(08 Marks)**

7 a. Design a Huffman encoder for a source generating $\{a_1, a_2, a_3, a_4, a_5, a_6, a_7\}$ and with probabilities {0.05, 0.1, 0.1, 0.15, 0.05, 0.25, 0.3}. **(06 Marks)**

b. Explain in brief SIP. **(08 Marks)**

c. Explain in brief the structure of a SCTP packet. **(06 Marks)**

8 a. Explain the following:
   i) CGSR of Ad-hoc networks. ii)Types of attack in Ad-hoc networks. **(10 Marks)**

b. Briefly explain direct and multi hop routing of intracluster routing protocol with the help of relevant diagram. **(06 Marks)**

c. Write a short note on Zigbee technology. **(04 Marks)**

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06CS64

Sixth Semester B.E. Degree Examination, Dec.09/Jan.10
Computer Networks - II

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions, selecting at least TWO questions from each part.***

PART – A

1 a. Why is packet switching more suitable than message switching for interactive applications? Compare the delays in datagram packet switching and message switching. **(06 Marks)**

b. Compare the Bellman-Ford algorithm and Dijkstra's algorithm for finding the shortest paths from a source node to all other nodes in a network. **(08 Marks)**

c. Suppose that 64 kbps PCM coded speech is packetized into a constant bit rate ATM cell stream.
i) What is the interval between production of full cells?
ii) How long does it take to transmit the cell at 155 Mbps?
iii) How many cells could be transmitted in this system between consecutive voice cells? **(06 Marks)**

2 a. Consider a packet-by-packet fair queuing system with three logical buffers and with a service rate of one unit / second. Show the sequence of transmissions for this system for the following packet arrival pattern :
Buffer 1 : arrival at time t = 0, length = 2 ; arrival at t = 4, length = 1
Buffer 2 : arrival at time t = 1, length = 3 ; arrival at t = 2, length = 1
Buffer 3 : arrival at time t = 3, length = 5 **(10 Marks)**

b. An university has 150 LANs with 100 hosts in each LAN.
i) Suppose the university has one class B address. Design an appropriate subnet addressing scheme.
ii) Design an appropriate CIDR addressing scheme. **(04 Marks)**

c. Explain identification, flags and fragment offset field in the IP version 4 header. **(06 Marks)**

3 a. What is the need to change from IPV4 to IPV6? Write the IPV6 basic header and describe its fields. **(10 Marks)**

b. Describe how TCP establishes the connection using a three-way handshake procedure. **(08 Marks)**

c. What is routing information protocol (RIP)? What is the maximum width of a RIP network? **(02 Marks)**

4 a. What are the six Q_oS performance parameters in ATM? **(06 Marks)**

b. What is ATM adaptation layer type 1 (AAL1)? Describe the generic AAL1 process. **(06 Marks)**

c. Describe PNNI signaling with an example. **(08 Marks)**

PART – B

5 a. What are the functions performed by a network management system? **(05 Marks)**

b. What are SNMP, SMI and MIB? **(03 Marks)**

c. Explain the RSA algorithm. Using it, encrypt the following :
p = 5, q = 11 , e = 7 , P = 18 **(12 Marks)**

6 a. Discuss the classification of resource allocation schemes. **(06 Marks)**

b. What is a virtual private network (VPN)? Mention the different types of VPN and benefits of deploying a VPN. **(06 Marks)**

c. What is an MPLS network? Explain MPLS operation. **(08 Marks)**

7 a. Explain the typical JPEG process for production and compression of still images. **(12 Marks)**

b. Design a Huffman encoder for a source generating $\{a_0, a_1, a_2, a_3, a_4, a_5, a_6\}$ and with corresponding probabilities {0.55, 0.10, 0.05, 0.14, 0.06, 0.08, 0.02}. **(08 Marks)**

8 a. What are Ad-hoc networks? Mention their application types and unique features. **(08 Marks)**

b. Explain the structure of a typical sensor node. **(06 Marks)**

c. What are the advantages of the DEEP clustering protocol? **(06 Marks)**

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Sixth Semester B.E. Degree Examination, May/June 2010
Computer Networks – II

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions, selecting at least TWO questions from each part.***

PART – A

1 a. Explain and derive delays in datagram packet switching. **(10 Marks)**

b. Consider the network given below in Fig.Q1(b). Use the Dijkstra's algorithm to find shortest paths from all nodes to destination node 2. **(10 Marks)**

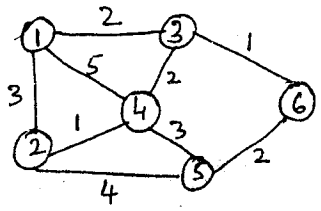

Fig.Q1(b)

2 a. Explain the FIFO and priority queue scheduling for managing traffic at packet level. **(10 Marks)**

b. Explain the leaky bucket algorithm for policing the traffic at flow level. **(10 Marks)**

3 a. Explain the IP address classification. Identify the following IP addresses and their address class:
200.58.20.165 128.167.23.20 16.196.128.50 150.156.10.10 **(10 Marks)**

b. Give the format of IPV6 basic header. Explain the importance. **(10 Marks)**

4 a. Explain the OSPF protocol and its operation. **(10 Marks)**

b. Give the structure of ATM cell header and details of QOS parameters. **(10 Marks)**

PART – B

5 a. Which are the different data types used in the structure of management information? **(10 Marks)**

b. Give the comparison between public key and secret key crypto graphic systems. **(10 Marks)**

6 a. Explain VPN and its types based on tunneling. **(10 Marks)**

b. Explain the need for overlay networks and P2P connection. **(10 Marks)**

7 a. Explain the JPEG compression method and still image processing. **(10 Marks)**

b. Explain the session initiation protocol. **(10 Marks)**

8 a. With an example, explain the dynamic source routing protocol. **(10 Marks)**

b. List the security issues in ad-hoc networks. Explain types of attacks. **(10 Marks)**

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