Total No. of Questions : 8]

SEAT No. :

P808

[Total No. of Pages : 3

[5870] - 1128
T.E. (Computer)
COMPUTER NETWORK AND SECURITY
(2019 Pattern) (Semester - I) (310244)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Attempt Q1, or Q.2, Q.3 or Q.4, Q.5or Q.6, Q.7 or Q.8.***
2) ***Neat diagrams must be drawn wherver necessary.***
3) ***Figures to the right indicate full marks.***
4) ***Use of Calculator is allowed.***
5) ***Assume suitable data is necessary.***

Q1) a) Explain distance vector routing algorithm. **[6]**

b) A host was given the 192. 168.2.64 /25 IP address, indicate: **[6]**

i) Net mask of the network in dotted decimal notation.

ii) The network address to which the host belongs.

iii) The network broadcast address to which the host belongs.

iv) The total number of hosts available in the network.

c) Explain IPv4 header format in detail **[6]**

OR

Q2) a) What is ARP? How it works? **[6]**

b) Suppose a router has built up the routing table as shown in the following table. The router can deliver packets directly over interfaces eth0 and eth1, or it can forward packets to other routers in the table. **[6]**

Destination	Netmask	Gateway
156.26.10.0	255.255.255.192	Eth0
156.26.10.128	255.255.255.128	Eth1
156.26.0.0	255.255.0.0	156.26.10.1
0.0.0.0	0.0.0.0	156.10.1.30

Describe what the router does with a packet addressed to each of the following destinations

i) 156.26.10.66

ii) 156.26.10.226

iii) 168.130.12.27

c) Explain Network Address Translation (NAT) process. **[6]**

P.T.O.

Q3) a) For each of the following applications, determine whether TCP or UDP is used as the transport layer protocol and justify the reason(s) for your choice. **[5]**

i) File Transfer

ii) Watching a real time streamed video

iii) Web browsing

iv) A Voice over IP (VoIP) telephone conversation.

v) YouTube video

b) Explain TCP state transition diagram? **[6]**

c) Define Socket? Explain Socket primitives at client and server side for TCP communication with diagram. **[6]**

OR

Q4) a) Explain TCP connection establishment process with suitable diagram. **[5]**

b) What causes silly window syndrome? How is avoided? Explain. **[6]**

c) Following is a dump of UDP header in Hexadecimal format **[6]**

06 32 00 0D 00 1C E2 17

i) What is source port number?

ii) What is destination port number?

iii) What is total length of the user datagram?

iv) What is the length of the data?

v) Is packet directed from a client to server or vice versa?

vi) What is the client process?

Q5) a) What is the difference between persistent & non persistent HTTP? Explain HTTP Request & Response message format. **[6]**

b) Explain working of DHCP. **[6]**

c) Differentiate between POP & IMAP protocol. **[6]**

OR

Q6) a) Explain how DNS query resolved? **[6]**

b) Explain FTP w.r.t. control and data connection? Explain any two FTP commands. **[6]**

c) When web pages containing emails are sent out, they are prefixed by MIME Header, why? Explain MIME Header. **[6]**

Q7) a) Draw and explain Operational Model of Network Security. **[5]**

b) Discuss the working of IPSec? What are the different security services offered by IPSec? **[6]**

c) Differentiate between Active attacks and Passive Attacks. **[6]**

OR

Q8) a) List and explain various elements of Information Security. **[5]**

b) Compare Symmetric Key and Asymmetric key encryption techniques. **[6]**

c) Explain Secure Socket Layer handshake Protocol. **[6]**

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SEAT No. :

PA-1444

[Total No. of Pages : 2

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T.E. (Computer Engineering)

COMPUTER NETWORKS AND SECURITY

(2019 Pattern) (Semester-I) (310244)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Attempt Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume suitable data, if necessary.***

Q1) a) Explain Path vector routing. **[6]**

b) Give short note on: **[6]**

i) Mobile IP

ii) MPLS

c) 192.168.5.131/26 for given address find out the **[6]**

i) Subnet mask?

ii) What is first is first ip address for given series?

iii) What is last ip address for given series?

OR

Q2) a) Draw and explain Header format of IPV4. **[6]**

b) Give short note on OSPF. **[6]**

c) List and explain functions of Network Layer. **[6]**

Q3) a) Give the difference between TCP and UDP. **[6]**

b) Explain RTP protocol in detail. **[6]**

c) 06 32 000D 001C E2 17 using this UDP hexadecimal dump find out **[6]**

i) Source port no

ii) Destination port no

iii) Total length of user datagram.

OR

Q4) a) Explain SCTP protocol in detail. **[6]**

b) List and explain transport layer services. **[6]**

c) What is socket? What are different types of socket? Explain socket functions used in connection oriented services with diagram. **[6]**

P.T.O.

Q5) a) What is DHCP? Explain DHCP working with client state diagram. **[9]**

b) Write short notes on FTP and MIME. **[8]**

OR

Q6) a) What is HTTP? Explain HTTP request and reply messages. **[9]**

b) Write short notes on TELNET and Webmail. **[8]**

Q7) a) Explain IPSec in detail. **[6]**

b) Differentiate between Symmetric and Asymmetric Key Cryptography. **[6]**

c) Give short note on Firewalls. **[5]**

OR

Q8) a) Explain model for network security. **[6]**

b) Explain SSL in detail. **[6]**

c) Explain Types of Network Attacks. **[5]**

Total No. of Questions : 8] **SEAT No. :**

P271 **[Total No. of Pages : 2**

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T.E. (Computer Engineering) (Semester - I)

COMPUTER NETWORKS AND SECURITY

(310244) (2019 Pattern)

Time : 2½ Hours] ***[Max. Marks : 70***

Instructions to the candidates:

1) ***Neat diagrams must be drawn whenever necessary.***
2) ***Figures to the right side indicate full marks.***
3) ***Assume Suitable data if necessary.***
4) ***Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.***

Q1) a) Differentiate between Circuit Switching and Packet Switching. **[6]**

b) Give short note on RIP. **[6]**

c) 192.168.5.71 /26 for given address find out the **[6]**

i) subnet mask?

ii) what is first ip address for given series?

iii) what is last ip address for given series?

OR

Q2) a) Draw and explain Header format of IPV6. **[6]**

b) Give short note on BGP **[6]**

c) List and explain functions of Network Layer. **[6]**

Q3) a) What is socket? What are different types of socket? Explain socket functions used in connection less services with diagram. **[6]**

b) Explain TCP congestion control in transport layer? **[6]**

c) What is Quality of Service? Explain any two methods to improve QoS? **[6]**

OR

P.T.O.

Q4) a) Explain RTP protocol in detail. **[6]**

b) List and explain transport layer services. **[6]**

c) 06 32 00 0D 001C E2 17 using this UDP hexadecimal dump find out in decimal numbers **[6]**

i) Source port no.

ii) Destination port no.

iii) Total length of user datagram.

Q5) a) What is HTTP? Explain HTTP request and reply messages. **[9]**

b) Write short notes on SMTP and MIME. **[8]**

OR

Q6) a) What is DHCP? Explain DHCP working with client state diagram. **[9]**

b) Write short notes on POP3 and Webmail. **[8]**

Q7) a) Differentiate between Symmetric and Asymmetric Key Cryptography. **[6]**

b) Explain model for network security. **[6]**

c) Give short note on Security Policy and mechanisms. **[5]**

OR

Q8) a) Explain Types of Network Attacks. **[6]**

b) Explain IPSec in detail. **[6]**

c) Give short note on S/MIME. **[5]**

Total No. of Questions : 8]

SEAT No. : [ ]

P-7540

[Total No. of Pages : 2

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T.E. (Computer Engineering)

COMPUTER NETWORKS AND SECURITY

(2019 Pattern) (Semester - I) (310244)

Time : 2½ Hours] ***[Max. Marks : 70***

Instructions to the candidates:

1) ***Answer Q.1 or Q.2, Q.3 or Q.4, Q5 or Q6, Q7or Q8.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume suitable data if necessary.***

Q1) a) Give short note on : **[6]**

i) ARP

ii) RARP

b) Explain Distance vector routing. **[6]**

c) Differentiate between Circuit Switching, Message Switching and Packet Switching. **[6]**

OR

Q2) a) Give short note on : **[6]**

i) ICMP

ii) IGMP

b) Explain Link state routing. **[6]**

c) 192.168.5.51 / 26 for given address find out the i. subnet mask? ii. what is first ip address for given series?, iii. what is last ip address for given series? **[6]**

Q3) a) Draw and explain TCP header format. **[6]**

b) List and explain transport layer services. **[6]**

c) e2 a7 00 0D 00 20 74 9e 0e ff 00 00 00 01 00 00 00 using this UDP hexadecimal dump find out in decimal numbers i. Source port no., ii. Destination port no., iii. Total length of user datagram. **[6]**

P.T.O.

OR

Q4) a) Draw and explain UDP header format. **[6]**

b) What is socket? What are different types of socket? Explain socket functions used in connection oriented services with diagram. **[6]**

c) Explain SCTP protocol in detail. **[6]**

Q5) a) What is DNS? Explain DNS working. **[9]**

b) Write short notes on FTP and TELNET. **[8]**

OR

Q6) a) What is SNMP? Explain SNMP working. **[9]**

b) What is HTTP? Explain HTTP request and reply messages. **[8]**

Q7) a) Draw and explain ITU-T X.800 Security Architecture for OSI. **[6]**

b) Give short note on HTTPS. **[6]**

c) Give short note on IDS. **[5]**

OR

Q8) a) Differentiate between Symmetric and Asymmetric Key Cryptography. **[6]**

b) Explain SSL in detail. **[6]**

c) Give short note on Firewalls. **[5]**

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