Total No. of Questions : 8]

SEAT No. : [ ]

P2349

[Total No. of Pages : 3

[4937]-1002
M.Sc.
COMPUTER SCIENCE
CS - 102 : Advanced Networking
(2013 Pattern) (Semester - I)

Time : 3 Hours] ***[Max. Marks : 50***

Instructions to the candidates:

1) ***Solve any 5 out of 8 questions.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to right indicate full marks.***

Q1) Attempt all of the following :

a) "Ethernet has imposed restrictions on both the minimum and maximum length of a frame. Comment on the above statement. **[4]**

b) By using playfair technique, convert the following plaintext message into cipher text. **[4]**

Plain Text : YELLOW CHILLIES

Key word : RESTAURANT

c) Explain what is transient cink in OSPF terminology? **[2]**

Q2) Attempt all of the following:

a) Write a note on fragmentation in IP datagram. Which fields are related to fragmentation is IPv4 datagram? **[4]**

b) What is the basic principle of DES? Explain key transformation and expansion permutation steps of DES in brief. **[4]**

c) What is biometric authentication? **[2]**

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Q3) Attempt all of the following:

a) Explain three primary steps involved in the working of kerberos protocol. **[4]**

b) What is slow start algorithm that is used in TCP congestion control? How it is different from Internet congestion control algorithm? **[4]**

c) Explain in brief buffer overflow attack on SSL. **[2]**

Q4) Attempt all of the following:

a) How does firewall Performs Network Address Translation? **[4]**

b) What is digital certificate? Explain the steps involved in the creation of digital certificate. **[4]**

c) Explain how process server is helpful in initial connection protocol used in transport layer? **[2]**

Q5) Attempt all of the following:

a) Describe the following characteristics of real time audio - video communication. **[4]**

i) Ordering

ii) Multicasting

iii) Translation

iv) Mixing

b) Given the two prime numbers P = 7, Q = 17. Find out N, E & D in an RSA encryption process. **[4]**

c) What is strict source route option in an options part of IP datagram. **[2]**

Q6) Attempt all of the following:

a) Explain key principles of security. **[4]**

b) Consider the routing table for router R_1. **[4]**

Routing table for R_1

Mask	Network addr.	Next hop	interface
/28	140.6.12.240	-	M_2
/25	140.6.12.128	-	M_o
/24	201.8.32.0	-	M_3
/16	201.8.0.0	-	M_1
Default	Default	140.6.12.244	M_2

i) Show the forwarding process if a packet arrives at R_1 with destination address 201.8.30.4.

ii) Show the forwarding process if a packet arrives at R_1 with destination address 20.54.28.75.

c) What is shared secret authentication? **[2]**

Q7) Attempt all of the following:

a) Explain the significance of link state update packet. Why it is called as heart of OSPF operation? **[5]**

b) Write a note on key management in IPsec. **[5]**

Q8) Attempt all of the following:

a) Explain the concept of electronic money. What is the classification of it based on involvement of bank in the transaction? **[5]**

b) No matter how the client and server are programmed, there are always situations where transport layer fails to recover properly. Explain. **[5]**