

Max. Marks: 50

Time allowed: 3 Hours

B.E. (Computer Science and Engineering)
Sixth Semester
CS-601: Computer Networks and Security

1059

Exam.Code:0918
Sub. Code: 6792

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Part.

x-x-x

I	<p>i) A network on the internet has subnet mask of 255.255.240.0. What is maximum number of hosts it can handle?</p> <p>ii) Briefly give the difference between open loop and closed loop congestion control techniques.</p> <p>iii) An IP datagram using the strict source routing option has to be fragmented. Do you think the option is copied into each fragment, or is it sufficient to just put it in the first fragment? Briefly give your answer.</p> <p>iv) What is significance of Fermat's little theorem?</p> <p>v) What is SNMP?</p> <p>vi) Define Digital Signatures.</p> <p>vii) Give the name of any protocol which uses link state routing algorithm.</p> <p>viii) Briefly explain how IP security is maintained.</p> <p>ix) Suppose that instead of using 16 bits for the network part of class B address originally, 20 bits had been used. How many class B networks would there have been?</p> <p>x) What is problem associated with Distance Vector Routing protocol?</p>
PART-A	
II	<p>a) Explain the differences between IPv4 and IPv6 addressing along with their frame formats</p>
b)	<p>Consider the subnet given in above figure. Distance vector routing is used, and the following vectors have just come in to router C: from B (5,0,8,12,6,2); from D (16, 12,6,0,9,10); and from E (7,6,3,9,0,4). The measured delays to B, D, and E are 6, 3, and 5 respectively. What is C's new routing table? Give both the outgoing line to use and the expected delay.</p>
III	<p>a) Explain the difference between upward multiplexing and downward multiplexing of Transport layer.</p>
b)	<p>Imagine a flow specification that has a maximum packet size of 1000 bytes, a token bucket rate of 10 million bytes/sec, a token bucket size of 1 million bytes, and a maximum transmission rate of 50 million bytes/sec. How long can a burst at maximum speed last?</p>
IV	<p>a) Explain differences between TCP and UDP protocols along with their frame formats.</p> <p>b) Explain different crash recovery methods of transport layer.</p>
PART-B	
V	<p>a) Explain how Mono-alphabetic Cipher is prone to Statistical Analysis Attacks? How is this problem eliminated in polyalphabetic ciphers?</p> <p>b) What is the order of effort required to break 2-DES by "Meet-in-the-Middle Attack"?</p>
VI	<p>a) What is the strength of Diffie-Hellman key exchange scheme? By assuming $p=7$, $g=3$, $X_A=3$ and $X_B=5$. Calculate the Secret Key.</p> <p>b) Explain the use of Hash functions to provide source authentication using Digital Signatures</p>
VII	<p>Write short notes on following</p>
<p>a) SSL b) PGP c) Public Key Distribution d) Packet Level Firewall e) VPN</p>	<p>(2) (2) (2) (2) (2)</p>

x-x-x