Sardar Patel Institute of Technology

Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai-400058, India

(Autonomous College Affiliated to University of Mumbai)

End Semester Examination

Nov 2017

Max. Marks: 100 Duration: 180 Mi
Class: T.E. Semester: V
Course Code: CPC504 Branch: Computer
Name of the Course: Computer Networks

Instruction:
(1) All questions are compulsory
(2) Draw neat diagrams
(3) Assume suitable data if necessary

Q No.	Question	Max. Marks	CO
Q.1(a)	List any two protocols used by each Layer of OSI Reference Model. (any five layers)	05	CO
Q.1(b)	Justify the need of NVT with suitable diagram.	05	CO
Q.1(c)	Differentiate between Guided Media and Unguided Media (any five points).	05	CO
Q.1(d)	List implementation categories of Standard Ethernet and describe any one.	05	CO
Q.2 (a)	The following character encoding is used in a data link protocol: A: 01000111 B: 11100011 FLAG: 01111110 ESC: 11100000 Show the bit sequence transmitted (in binary) for the character frame "A ESC ESC FLAG FLAG A B" when each of the following framing methods is used: (i) Byte count. (ii) Byte stuffing. (ii) Bit stuffing.	10	CO
Q.2 (b)	If dataword is represented by 11101010101, then calculate the number of parity bits needed by the Hamming Code. Consider an even parity and calculate codeword for the given message.	10	CO
Q.3 (a)	Given a Class C address 200.30.10.0 and subnet mask as 255.255.255.192 answer following: (i) Number of subnets created (ii) Number of IP address per subnet (iii) Calculate IP address of First host for all subnets (iv) Calculate IP address of Last host for all subnets (v) Broadcast address of each subnet for all subnets.	10	CO

Q.3 (b)	Calculate Checksum for an UDP segment using data given below (I)Source IP is 128.50.10.2 (II)Destination IP is 220.39.40.110 (III)The Flags of pseudo header are all set to 0's (IV)Protocol Number used to identify UDP is 17 (V)UDP total length is 16 (VI) The source port number is 49152 (VII) The Destination Port number is 53 (VIII) The message transmitted is "HI" (Convert Alphabets to ASCII and then ASCII to 8-bit Binary numbers)	10	CO2
Q.4 (a)	Elaborate on traffic shaping using Leaky Bucket Algorithm with suitable diagram. OR Illustrate working of Choke packet and Back Pressure technique for Closed Loop Congestion Control with suitable diagrams.	10 10	CO2 CO2
Q.4 (b)	What is Count-to-Infinity problem in Distance Vector Routing (DVR)? Describe the three techniques used to overcome Count-to-Infinity in DVR. OR Describe the Link State Routing (LSR) algorithm with its advantages.	10 10	CO2 CO2
Q.5 (a)	List roles of SNMP and describe SNMP PDU packet format with suitable diagram. OR Describe atleast 8 types of Object identifiers in MIB-2 along with Object Identifier tree diagram.	10 10	CO4 CO4
Q.5 (b)	Discuss TCP header with suitable diagram. OR Illustrate Connection Establishment and Connection Termination phases of Three-way Handshake in TCP with suitable diagrams.	10 10	CO2 CO2