



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-(Re-Exam)

July 2019

Max. Marks: 60

Class: T.E.

Course Code: CE51

Name of the Course: Data Communication and Computer Networks

Duration: 180 Min

Semester: V

Branch: Computers

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 three layers of OSI Model and discuss two functions of each layer.	06	CO2
Q.1(b)	Differentiate between Fibre Optic Cable, Twisted Pair cable and Coaxial Cable?(Any 6 points)	06	CO1
Q.2(a)	Calculate number of parity bits needed to correct a single bit error in dataword "1011" using Hamming Code and calculate codeword using even parity for given dataword. (Please mention formula)	06	CO3
	OR		
	Deduct the number of redundant bits to be added and calculate the codeword using Cyclic Redundancy Check with generator function $G(x)=x^3 + 1$ for the message represented as $M(x)= x^3 + x^2 + x$. (Please mention formula)	06	CO3
Q.2 (b)	Why Delta Modulation is used in digital communication? How Modulator and Demodulator works in order to perform the Delta Modulation.	06	CO1
Q.3 (a)	An organization is granted the block 211.17.180.0/24. The administrator wants to create 32 subnets. (i) Find the subnet mask. (ii) Find the number of addresses in each subnet. (iii) Find the first and last host addresses in subnet 1. (iv) Find the first and last host addresses in subnet 32. (v) Find broadcast address of the subnet 3 and subnet 6. (vi) Find network interface address of subnet 20 and subnet 24.	06	CO4
Q.3 (b)	Differentiate between Bus, Star and Ring Topology.(Any 6 Points)	06	CO3
Q.4 (a)	What is Count-to-Infinity Problem? How Link State Routing overcomes this problem?	06	CO4
Q.4 (b)	Draw and explain TCP header format.	06	CO3
Q.5 (a)	How does Remote Logging works? Justify the need of NVT in Remote Logging.	06	CO4

	What is the need of MIME in E-mail service? Draw and discuss MIME Header.	06	CO4
Q.5 (b)	Differentiate between OSPF and BGP. (Any 6 Points)	06	CO4
	OR		
	Differentiate between TCP and UDP.(Any 6 Points)	06	CO4