SOMAIYA VIDYAVIHAR UNIVERSITY

Semester: July 2024-November 2024		
Maximum Marks: 30 M	Examination: In-Semester Examination	Duration :1 Hr. 15 min
Programme code: 01 Programme: B.Tech in Computer Engineering	Class: ~~FY/SY~~/TY/~~LY~~ ~~MTECH~~	Semester: ~~I/II/III/IV~~/V/~~VI/VII/VIII~~ (SVU 2020)
Name of the Constituent College: K. J. Somaiya College of Engineering	Name of the department: COMP/~~ETRX/EXTC/IT/MECH~~	
Course Code:116U01C502	Name of the Course: Computer Networks	

Question No.		Max. Marks
Q1	Answer any **TWO** of following: A. Differentiate between Switch, Router and Gateway (5 Points Each). B. Explain Vulnerable time in Pure and Slotted ALOHA with the help of labeled diagrams. C. Explain Encapsulation and Decapsulation of data in OSI model with the help of a labeled diagram.	10M
Q2	A. Explain Byte Stuffing and Bit Stuffing. Following data fragment occurs in middle of a data stream for which byte stuffing algorithm is used: **A | B | ESC | C | ESC | FLAG | FLAG | D** Explain Byte stuffing and Unstuffing for the above data stream. B. A 12-bit Hamming code whose hexadecimal value is 0xE4F arrives at the receiver. Calculate the original value in hexadecimal? Assume that not more than 1-bit is in error. OR Differentiate between Go-Back-N ARQ and Selective Repeat ARQ on the basis of transmitter and receiver - frame sequence no - window size (sender and Receiver) - ARQ technique - link utilization - piggybacking	5M 5M
Q3	A. Explain Ethernet frame structure with the help of a Labeled diagram. B. A large number of consecutive IP addresses are available starting at 172.16.0.0/16 Four organizations A, B, C, D request 4000, 2000, 4000 and 8000 addresses respectively, and in that order. Calculate First Address, Last Address and subnet mask in ***w.x.y.z/s*** notation for these 4 organizations.	(3+7)M