27.01.2023(E)

SOMAIYA

Semester: August 2022 – December 2022 - Jan-2023		
Maximum Marks:100 Examination: ESE Examination (Re-Exam) Duration: 3 Hours		
Programme code: 01 Programme: B Tech Computer Engineering	Class: TY	Semester: V (SVU 2020)
Name of the Constituent College: K. J. Somaiya College of Engineering	Name of the department: COMP	
Course Code: 116U01C502	Name of the Course: Computer Networks	
Instructions: 1)Draw neat diagrams 2)Assume suitable data if necessary		

Question No.		Max. Marks
Q1 (a)	Draw and explain the OSI Reference Model with services and functions of each layer. **OR** Discuss design issues in OSI Layers	**10** **10**
Q1 (b)	A bit stream 1101011011 is transmitted using the standard CRC method. The generator polynomial is x^4+x+1. What is the actual bit string transmitted? **OR** Explain CSMA/CD in detail with its frame format.	**10** **10**
Q2 (a)	The following is a dump of a UDP header in hexadecimal form: 06 32 00 0D 00 1C E2 17 What is the **(a)** Source port number **(b)** Destination port number **(c)** Total length of the UDP **(d)** Length of the data **(e)** Considering that an IP frame can have a maximum total length of 65535 bytes, what is the maximum length of the data in a UDP frame?	**10**
Q2 (b)	What is Domain Name System? How does it work? Explain the resolution process. **OR** Explain HTTP Protocol with its features and working.	**10** **10**
Q3 (a)	A slotted ALOHA network transmits 200-bit frames on a shared channel of 200 kbps. What is the throughput if the system (all stations together) produces: (a) 1000 frames per second (b) 500 frames per second (c) 250 frames per second.	**10**
Q3 (b)	An address in a block is given as 201.10.6.54. Find the number of addresses in the block, the first address, and the last address. Assume classful addressing. **OR** Explain IPv6 Packet Format in detail with neat diagram.	**10** **10**
Q4 (a)	Explain TCP segment header format in detail. **OR**	**10**

	Explain Open Loop and Closed Loop Congestion Control in TCP.	10
Q4 (b)	Explain OSPF protocol in detail with its working and message format.	10
Q5 (a)	Explain SMTP Protocol in detail with its components and working.	10
Q5 (b)	Discuss the different networking devices used for internetworking. **OR** Draw and explain different networking topologies.	10 10