Roll Number:_____

Thapar Institute of Engineering & Technology, Patiala

Department of Computer Science and Engineering

AUXILIARY EXAM

B. E. (Third Year): Semester-V	Course Code: UCS413
Branch: CSE/COE	Course Name: Network Programming
24th Feb, 2023 (Friday)	Time: 5:30 P.M. To 8:30PM
Duration: 3 Hours	Max Marks: 100
Name of Instructor: Dr. Surjit Singh	

Note: *Attempt all questions in a proper sequence. Questions having multiple parts should be attempted at one place. Without proper steps and justification (wherever required), no marks will be awarded. Write your programs in C. Assume missing data, if any, suitably.*

		Marks
Q1	WAP to design a Server which can handle two different clients i.e. TCP and UDP, using ***select()*** system call. [*No need to write client-side application programs*].	12
Q2	a). Differentiate between SCTP, TCP and UDP. b). Draw the state transition diagram of SCTP to show its association and termination.	6 6
Q3	WAP to design a HTTP webserver which sends "Hello" message to client.	10
Q4	**a).** What is the role of file descriptors during socket creation? What are the attributes/parameters used during the creation of socket using file descriptors. **b).** Explain the following functions in TCP socket: *i) Listen and accept* *ii) Send and connect*	2.5+2.5 2.5+2.5
Q5	Describe the following in detail with their use, syntax and example: *a) SO_BROADCAST* *b) SO_DEBUG* *c) getsockopt()* *d) setsockopt()*	10
Q6	**a).** What are SVIs? Describe IEEE 802.1q VLAN Header. **b)** Differentiate between Intra-VLAN and Inter-VLAN Routing with the help of suitable example.	5 5
Q7	**a).** Differentiate between Iterative and Recursive DNS queries. **b).** State down the steps to resolve the DNS query to find the IP address of "Finance.*corp.ajax.com*" using recursive and iterative mode both.	5 5
Q8	**a).** Which problems exists in the communicating machines that are solved by TLVs? Explain procedure to solve the compatibility problem between different machines along with suitable example. **b).** What does mean by heterogeneity? Describe IP in IP encapsulation. Explain the different transition strategies that are used in IP encapsulation.	5 6
Q9	Write the programs to implement multicast sending and receiving processes for connection-less client/server communication. Use the socket option to join the multicast group that receives the datagrams. When joining a group, specify the class D group address along with the IP address of a local interface. The system must call the socket option for each local interface receiving the multicast datagrams.	7.5+7.5