

--	--	--	--	--	--	--	--	--	--



INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

(Dundigal-500043, Hyderabad)

B.Tech V SEMESTER END EXAMINATIONS (REGULAR) - DECEMBER 2022

Regulation:UG20

NETWORK PROGRAMMING AND MANAGEMENT

Time: 3 Hours

(CYBER SECURITY)

Max Marks: 70

Answer ALL questions in Module I and II

Answer ONE out of two questions in Modules III, IV and V

All Questions Carry Equal Marks

All parts of the question must be answered in one place only

MODULE – I

- (a) With neat diagram explain how socket can be used by client or a server, for a stream transfer by TCP to form communication with a specific endpoint address. [BL: Understand| CO: 1|Marks: 7]
- (b) Summarize different address conversion functions. Convert an IPv4 address from a dotted decimal string to its 32 bit network byte ordered binary value. [BL: Apply| CO: 1|Marks: 7]

MODULE – II

- (a) Differentiate between the blocking i/o model, non blocking i/o model and i/o multiplexing model of unix. [BL: Understand| CO: 2|Marks: 7]
- (b) Describe the significance interrupted system calls in application protocol and handling the interrupted system calls. [BL: Apply| CO: 2|Marks: 7]

MODULE – III

- (a) Elucidate the options that are used to pass a value of the specified datatype between user process and the system. Summarize the functions for examining and modifying socket options. [BL: Understand| CO: 3|Marks: 7]
- (b) Write a C program to combine the concurrent TCP echo server with iterative UDP echo server into a single server using select function to multiplex the TCP and UDP socket? [BL: Apply| CO: 3|Marks: 7]
- (a) List various generic socket options. Demonstrate the socket-level options names and their significance. [BL: Understand| CO: 4|Marks: 7]
- (b) Develop a C program that checks all the socket option of a socket and sets the value for receiver buffer size to 520 bytes. [BL: Apply| CO: 4|Marks: 7]

MODULE – IV

- (a) Determine the concept of raw socket input and define the three tests, when kernel has to pass IP datagram. [BL: Understand| CO: 5|Marks: 7]
- (b) Build a C program that uses threads and raw sockets for checking the connectivity of a remote machine. [BL: Apply| CO: 5|Marks: 7]

6. (a) With necessary steps explain how IPv4 TCP client communicate with an IPv6 server.
[BL: Understand| CO: 5|Marks: 7]
- (b) Design a C program that can generate an ICMPv4 echo request packet and process the received ICMPv4 echo reply.
[BL: Apply| CO: 5|Marks: 7]

MODULE – V

7. (a) What is trap directed polling? Illustrate how SNMP agent act as proxy for the devices with neat diagram.
[BL: Understand| CO: 6|Marks: 7]
- (b) Identify the process of management stations sends queries concerning a device to its proxy agent.
[BL: Apply| CO: 6|Marks: 7]
8. (a) Mention the goals of RMON. How to configure the network using RMON? Depict it using appropriate diagram.
[BL: Understand| CO: 6|Marks: 7]
- (b) Demonstrate the architecture of SNMP entity and traditional SNMP manager, as specified in RFC2271.
[BL: Apply| CO: 6|Marks: 7]

– ○ ○ ○ ○ –