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RV COLLEGE OF ENGINEERING®

(An Autonomous Institution affiliated to VTU)

V Semester B. E. Examinations Jan/Feb-21

Computer Science and Engineering

NETWORK PROGRAMMING AND SECURITY

Time: 03 Hours ***Maximum Marks: 100***

Instructions to candidates:

1. Answer all questions from Part A. Part A questions should be answered in first three pages of the answer book only.
2. Answer FIVE full questions from Part B. In Part B question number 2, 7 and 8 are compulsory. Answer any one full question from 3 and 4 & one full question from 5 and 6

PART-A

1	1.1	When TCP sends data to the other end, it receives an acknowledgement in return. What property of TCP is followed in this case?	01
	1.2	Short lived ports of clients are normally termed s _____.	01
	1.3	In TCP, sending and receiving data is done as _____.	01
	1.4	Trivial File Transfer protocol (TFTP) servers are assigned the UDP Port with number _____.	01
	1.5	If we have lower order byte at the starting address then such representation is called as _____.	01
	1.6	The _____ function assigns a local protocol address to a socket.	01
	1.7	List the actions performed when listen function is called by TCP server.	02
	1.8	How a new process is created in UNIX?	01
	1.9	_____ is used primarily to map between host names and IP address.	01
	1.10	If gethostbyname() is successful then it returns a pointer to hostent structure that contain _____.	01
	1.11	The function _____ takes a binary IPV4 address and tries to find the host name corresponding to that address.	01
	1.12	The key sharing algorithm which uses public key cryptography is _____.	01
	1.13	In Deffie – Hellman key exchange Alice compute secret key by using _____ of BoB.	01
	1.14	In typical Fiestal structure how many rounds are followed?	01
	1.15	In Fiestal structure the input data block is divided into _____ halves.	01
	1.16	List the two services provided for SSL connection by SSL Record protocol.	02
	1.17	Write the general IEEE 802 MPDU format.	02

PART-B

2	a	With a neat diagram explain two three way hand shake property of TCP connection establishment.	08
	b	With a neat diagram, explain the passing of socket address structure from process to kernel and kernel to process.	08
3	a	Explain getsockename() and getpeername(). Write a C program to obtain the address family of a socket.	08
	b	Implement a syntactically correct C program of client server communication that prints client IP.	08
		OR	
4	a	Explain listen function used by TCP server and also show the working of two queues maintained by TCP for listening socket.	08
	b	Explain the fork() and 6 exec() system calls with syntax and show the relation among six exec() function.	08
5	a	With syntax explain getsockopt() and retsoctopt() function.	06
	b	Explain the communication setup between client and server using connectionless protocol with neat diagram. Highlight the difference between recv() and recvfrom().	10
		OR	
6	a	Explain the fields in hostnet structure and servent structure with an example.	08
	b	Describe getaddrinfo() function with syntax and explain the structure of addrinfo.	08
7	a	Explain RSA algorithm and apply the same for the given set of data. P-17, a=31, e=7 and M=2	06
	b	Explain Dieffie-Hellman key exchange algorithm and apply the same for the following data P=23,α=9, $x^a = 4, x^b = 3$	06
	c	With a neat diagram explain the encryption and decryption process using public key cryptography.	04
8	a	Explain SSL protocol stack with neat diagram.	05
	b	With a neat diagram demonstrate SSL handshake protocol description.	05
	c	Explain the IEEE 802.11i phases of operation with neat diagram.	06