P P SAVANI UNIVERSITY

Fifth Semester of B. Tech. Examination
December 2021
SECE3011 Computer Networks

13.12.2021, Monday   Time: 09:00 a.m. To 11:30 a.m.   Maximum Marks: 60

Instructions:
1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

SECTION – I

Q - 1	Answer the Following: (Any Five)	[05]
(i)	Define Network.	
(ii)	Explain Full Duplex with suitable example.	
(iii)	Which waves penetrate walls?	
	A. Radio Waves B. Micro Waves C. Infrared Waves D. None	
(iv)	Which multiplexing technique transmits Digital signals?	
	A. TDM B. WDM C. FDM D. All	
(v)	What is length of MAC Address?	
	A. 48-bit B. 32-bit C. 128-bit D. 64-bit	
(vi)	Which connector is used for Unshielded Twisted Pair (UTP) cable?	
	A. RJ-45 B. BNC C. MT-RJ D. Subscriber Channel	
(vii)	Which of the following method is error correction method?	
	A. Hamming Code B. Cyclic redundancy check C. Checksum D. Piggybacking	
Q - 2 (a)	Explain following terms in short: [Any Two] LAN, MAN, WAN	[05]
Q - 2 (b)	What is the difference between error detection and correction? Explain any one error correction technique with suitable example.	[05]

OR

Q - 2 (a)	Perform cyclic redundancy check on sender as well as receiver side for the following message.
	     Original Message: 100100
	     Generator: 1101
		[05]

Q - 2 (b)	What is bit and byte stuffing? Explain with example.	[05]
Q - 3 (a)	Explain different Persistent methods with suitable diagram.	[05]
Q - 3 (b)	Write a short note on ARP.	[05]

OR

Q - 3 (a)	What is ALOHA protocol? Differentiate ALOHA and slotted ALOHA.	[05]
Q - 3 (b)	Explain Sliding window protocol using Stop and Wait ARQ Protocol.	[05]
Q - 4	Attempt any one.	[05]
(i)	Draw the sender and receiver windows for system using Stop and Wait ARQ for the following: a. Frame 0 and 1 sent and acknowledged b. Frame 2, 3, 4 and 5 sent, but Frame 4 lost during the transmission	
(ii)	Explain functionality of Repeater, HUB, Bridge, Switch and Router.	

SECTION – II

Q - 1	Answer the Following: (Any Five)	[05]

(i) What is the length of IPv6 Address?
   A. 128-bit   B. 64-bit   C. 32-bit   D. 16-bit

(ii) Find the class of address: 14.23.120.8
   A. Class-A   B. Class-B   C. Class-C   D. Class-D

(iii) Which layer in OSI model is responsible for process to process delivery?
   A. Transport   B. Session   C. Presentation   D. Application

(iv) Which of the following is connectionless protocol?
   A. UDP   B. TCP   C. Both (A) & (B)   D. None

(v) What is the length of port number (Address size)?
   A. 16-bit   B. 64-bit   C. 48-bit   D. 32-bit

(vi) What is Default mask for Class A address?
   A. 255.0.0.0   B. 255.255.0.0   C. 255.255.255.0   D. None

(vii) POP stands for _____.

Q - 2 (a) Explain the various types of classes used in classful addressing scheme of network layer. [05]

Q - 2 (b) A block of addresses is granted to a small organization. We know that one of the addresses is 205.16.37.39/25. What is the first address in the block? What is the last address in the block? What are the total numbers of addresses in the block? [05]

OR

Q - 2 (a) Write short note on Network Address Translation (NAT) protocol. [05]

Q - 2 (b) In a block of addresses, IP address of one host is 182.44.82.16/26. What are the first address, last address and total address in this block? [05]

Q - 3 (a) Write differences between connection oriented and connectionless services. [05]

Q - 3 (b) Explain ICMP in detail. [05]

OR

Q - 3 (a) Differentiate Datagram and Virtual circuit. [05]

Q - 3 (b) Draw and explain UDP packet header. [05]

Q - 4 Attempt any one. [05]

(i) Write a short note on DNS.

(ii) Write a short note on HTTP.

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