P P SAVANI UNIVERSITY

Third Semester of B.SC.IT Examination

December 2021

SSIT2010 Computer Networks

07.12.2021, Tuesday | 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: [05]

(i) Which transmission media provides the highest transmission speed in a network?

a)Coaxial cable
b)twisted pair cable
c)optical fiber
d)electrical cable

(ii) The physical layer is responsible for _____

a)line coding
b)channel coding
c)modulation
d)all of the mentioned

(iii) Which of the following tasks is not done by data link layer?

a) framing
b) error control
c) flow control
d) channel coding

(iv) When 2 or more bits in a data unit has been changed during the transmission, the error is called _____

a) random error
b) burst error
c) inverted error
d) double error

(v) A _____ is a device that forwards packets between networks by processing the routing information included in the packet.

a) bridge
b) firewall
c) router
d) hub

Q - 2 (a) Explain Wireless transmission waves. **[05]**

Q - 2 (b) Explain Ways of Signal Propagation. **[05]**

OR

Q - 2 (a) Explain Byte Stuffing and Bit Stuffing. **[05]**

Q - 2 (b) Explain VRC and LRC. **[05]**

Q - 3 (a) Explain Pure ALOHA and Slotted ALOHA. **[05]**

Q - 3 (b) A telephone line has a bandwidth of 3000 Hz (300 to 3300 Hz) assigned for data **[05]**

communications. The signal-to-noise ratio is usually 3162. For this calculate capacity.

Q - 4 Attempt following.

(i) Explain Mesh and Star Topology. [05]

SECTION – II

Q - 1 Answer the Following: (Any Five)

(i) A 4 byte IP address consists of _____ [05]
a) only network address
b) only host address
c) network address & host address
d) network address & MAC address

(ii) Which of the following routing algorithms can be used for network layer design?
a) shortest path algorithm
b) distance vector routing
c) link state routing
d) all of the mentioned

(iii) Transmission control protocol _____
a) is a connection-oriented protocol
b) uses a three way handshake to establish a connection
c) receives data from application as a single stream
d) all of the mentioned

(iv) A ____ is a TCP name for a transport service access point.
a) port
b) pipe
c) node
d) protocol

(v) Which is not a application layer protocol?
a) HTTP
b) SMTP
c) FTP
d) TCP

(vi) The _____ translates internet domain and host names to IP address.
a) domain name system
b) routing information protocol
c) network time protocol
d) internet relay chat

(vii) Application layer protocol defines _____
a) types of messages exchanged
b) message format, syntax and semantics
c) rules for when and how processes send and respond to messages
d) all of the mentioned

Q - 2 (a) Why do HTTP, FTP, SMTP, and POP3 run on top of TCP rather than on UDP? Name one application that uses UDP and why? **[05]**

Q - 2 (b) Explain flow and error control in TCP. **[05]**

OR

Q - 2 (a) Explain NAT (Network Address Translation). **[05]**

Q - 2 (b) Is deadlock possible in TCP? If yes, when? **[05]**

Q - 3 (a) Differentiate between IPv4 and IPv6. **[05]**

Q - 3 (b) Explain distance vector routing algorithm. **[05]**

OR

Q - 3 (a) Compare TCP and UDP. **[05]**

Q - 3 (b)	Explain Link-State routing algorithm.	[05]
Q - 4	Attempt any one.	[05]
(i)	What do you mean by sub-netting and super-netting? Explain it with example	
(ii)	Give the well-defined port number for the following protocols: 1) SMTP 2) DNS 3) HTTP 4) POP3 5) TELNET 6) HTTPS 7) SSH	

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