Total No. of Questions: 6 *Total No. of Printed Pages:3*

Enrollment No.....

Faculty of Engineering / Science

End Sem (Odd) Examination Dec-2022

CA3CO10 Computer Networks

Programme: BCA+MCA (Integrated)/BCA | Branch/Specialisation: Computer Application

Duration: 3 Hrs. **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

Q.1 i. In which layer term "Frames" is used- **1**

(a) Presentation (b) Data link

(c) Network (d) Transport

ii. Which of the following is not a vulnerability of the network layer? **1**

(a) Route spoofing

(b) Identity & resource ID vulnerability

(c) IP Address spoofing

(d) Weak or non-existent authentication

iii. In cyclic redundancy check, what is the CRC? **1**

(a) The divisor (b) The quotient

(c) The dividend (d) The remainder

iv. The retransmission of damaged frame in the data link layer is referred as- **1**

(a) Access control (b) Error control

(c) Flow control (d) All of these

v. Which one of the following uses physical star topology? **1**

(a) 10Base5 (b) 10Base2 (c) 10BaseT (d) None of these

vi. Which layer in OSI model is responsible for Process-to-Process delivery? **1**

(a) Presentation (b) Application

(c) Network (d) Transport

vii. A repeater takes a weakened or corrupted signal and perform- **1**

(a) Amplification (b) Regeneration

(c) Re-sampling (d) Re-routing

viii. Which of the following operate at the presentation layer? **1**

(a) FTP (b) SMTP (c) TFTP (d) JPEG

P.T.O.

	ix.	Encryption takes place at which layer? (a) Application (b) Presentation (c) Session (d) Transport	**1**
	x.	All of them are role of network interface card except for one. (a) To prepare data from computer for the network cable (b) Send the data to another computer (c) Control the flow of data between the computer and the cabling system (d) Provides the computer with a dedicated, full-time connection to a network	**1**
Q.2	i.	How a bridge can filter traffic? Why is filtering important?	**3**
	ii.	What is OSI model? Explain the functions, protocols and services of each layer?	**7**
OR	iii.	Define computer networks? Discuss various types of networks topologies in computer network. Also discuss various advantages and disadvantages of each topology.	**7**
Q.3	i.	What are transmission impairments?	**3**
	ii.	Discuss about guided and unguided media?	**7**
OR	iii.	What is Public Switched Telephone Network (PSTN) and how does it works?	**7**
Q.4	i.	How VRC generator and receiver can implement by using series of XOR gate. Explain with an example. A system uses LRC on a block of 24 byte, how many redundant bits are sent per block, what is the ratio of useful bits to the total bits?	**3**
	ii.	How does selective-Repeat-ARQ protocol is different from Go-Back-N protocol? Discuss with suitable diagrams.	**7**
OR	iii.	How performance is improved in CSMA/CD protocol compared to CSMA protocol? Draw procedural flowchart of CSMA/CA protocol?	**7**
Q.5	i.	Compare circuit and packet switching techniques on the basis of bandwidth utilization, security and reliability.	**3**
	ii.	Draw and explain the datagram format of Internet Protocol Version Four?	**7**

OR	iii.	Explain distance vector routing protocol and also discuss about "Count to Infinity" problem?	**7**
Q.6	i.	Draw the flowchart for leaky bucket algorithm?	**3**
	ii.	Explain segment structure of UDP with a suitable diagram?	**7**
OR	iii.	Discuss about Domain Name System (DNS).	**7**

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Marking Scheme
CA3CO10 Computer Networks

Q.1	i.	In which layer term "Frames" is used: (a) Presentation **(b) Data link** (c) Network (d) Transport	**1**
	ii.	Which of the following is not a vulnerability of the network layer? (a) Route spoofing (b) Identity & Resource ID Vulnerability (c) IP Address Spoofing **(d) Weak or non-existent authentication**	**1**
	iii.	In Cyclic Redundancy Check, What is the CRC: (a) The divisor (b) The quotient (c) The dividend **(d) The remainder**	**1**
	iv.	The retransmission of damaged frame in the data link layer is referred as: (a) Access control **(b) Error control** (c) Flow control (d) All of the above	**1**
	v.	Which one of the following uses physical star topology: (a) 10Base5 (b) 10Base2 **(c) 10BaseT** (d) None of the above	**1**
	vi.	Which layer in OSI model is responsible for Process to Process delivery: (a) Presentation (b) Application (c) Network **(d) Transport**	**1**
	vii.	A repeater takes a weakened or corrupted signal and perform: (a) Amplification **(b) Regeneration** (c) Re-sampling (d) Re-routing	**1**
	viii.	Which of the following operate at the presentation layer? (a) FTP (b) SMTP (c) TFTP **(d) JPEG**	**1**
	ix.	Encryption takes place at which layer? (a)application **(b)presentation** (c)session (d)transport	**1**
	x.	All of them are role of network interface card except for one. (a) To prepare data from computer for the network cable **(b) Send the data to another computer** (c) Control the flow of data between the computer and the cabling system (d) Provides the computer with a dedicated, full-time connection to a network	**1**
Q.2	i.	How a bridge can filter traffic? Why is filtering important?	**2+1**
	ii.	What is OSI Model? Explain the functions, protocols and services of each layer?	**7**
OR	iii.	Define computer networks? Discuss various types of networks topologies in computer network. Also discuss various advantages and disadvantages of each topology.	**2+5**
Q.3	i.	What are transmission impairments?	**3**
	ii.	Discuss about guided and unguided media?	**3.5+3.5**
OR	iii.	What is Public Switched Telephone Network(PSTN) and how does it works.	**3+4**
Q.4	i.	How VRC generator and receiver can implement by using series of XOR gate. Explain with an example. A system uses LRC on a block of 24 byte, how many redundant bits are sent per block, what is the ratio of useful bits to the total bits?	**2+1**
	ii.	How does selective-Repeat-ARQ protocol is different from Go-Back-N protocol? Discuss with suitable diagrams.	**5+2**
OR	iii.	How performance is improved in CSMA/CD protocol compared to CSMA protocol? Draw procedural flowchart of CSMA/CA protocol?	**5+2**
Q.5	i.	Compare circuit and packet switching techniques on the basis of bandwidth utilization, security and reliability.	**3**
	ii.	Draw and Explain the datagram format of Internet Protocol Version Four?	**2+5**
OR	iii.	Explain Distance Vector Routing Protocol and also discuss about "Count to Infinity" problem?	**4+3**
Q.6	i.	Draw the flowchart for Leaky Bucket Algorithm?	**3**
	ii.	Draw and Explain segment structure of UDP?	**2+5**
OR	iii.	Discuss about Domain Name System (DNS).	**7**

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