Total No. of Questions: 6 *Total No. of Printed Pages:2*

Enrollment No.....

Faculty of Engineering

End Sem (Even) Examination May-2022

EC3EL02 Data Communication & Computer Network

Programme: B.Tech. Branch/Specialisation: EC

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. Which protocol suite is used by the current Internet? **1**
(a) TCP/IP (b) UNIX (c) ACM (d) NCP

ii. Physical or logical arrangement of network is referred as- **1**
(a) Data Flow (b) Topology
(c) Mode of operation (d) None of these

iii. A simple parity check code can detect_____. **1**
(a) Odd number of errors (b) Even number of errors
(c) No errors (d) Many errors

iv. _____ error detection method uses one's complement method. **1**
(a) CRC (b) Two-dimensional parity check
(c) Simple parity check (d) Checksum

v. Header size of IPv4 is_____. **1**
(a) Always 20 bytes long
(b) Always 60 bytes long
(c) Between 20 to 60 bytes long
(d) Depends on MTU

vi. _____ technique is used to create subnetting effect. **1**
(a) ARP (b) APR (c) RARP (d) Proxy ARP

vii. UDP is _____protocol. **1**
(a) Unreliable, Connectionless
(b) Reliable, Connection oriented
(c) Unreliable, Connection oriented
(d) Reliable, Connectionless

viii. _____bit checksum is used in SCTP. **1**
(a) 8 (b) 16 (c) 32 (d) 64

ix. _____ domain is used to map an address to a name. **1**
(a) Generic (b) Inverse (c) Country (d) Port

P.T.O.

x. HTTP uses the service of TCP on well-known port _____. **1**
(a) 90 (b) 53 (c) 80 (d) 72

Q.2 i. Evaluate the performance metrics for any network. **2**

ii. Define the type of following addresses (unicast, multicast or broadcast): **3**
(a) 4A:30:10:21:10:1A (b) 47:20:1B:2E:08:EE
(c) FF:FF:FF:FF:FF:FF

iii. Explain the relationship of layers and addresses in TCP/IP. **5**

OR iv. Describe the functions of each layer in the OSI model **5**

Q.3 i. Define flow control and error control. **2**

ii. What are the reasons for moving from stop and wait ARQ protocol to go back-N ARQ protocol? **3**

iii. What do you mean by error detection? Explain any one method of error detection with an example. **5**

OR iv. Explain CSMA/CA by flow diagram. **5**

Q.4 i. Find the error in below given IPv4 addresses. **2**
(a) 75.301.14.45 (b) 221.34.7.8.20
(c) 111.56.045.78 (d) 11100010.23.14.67

ii. What is the difference between classful and classless addressing? **3**

iii. Write down the comparison between IPv4 and IPv6 packet headers. **5**

OR iv. Discuss the cases when a host knows the physical address but needs to know its logical address. Which protocols are used to map physical address to logical address? **5**

Q.5 i. Write down the IANA ranges for port numbers. **2**

ii. Give an example of a specific case, where UDP would make a good transport layer protocol. **3**

iii. Compare UDP and TCP. **5**

OR iv. Explain the congestion control in TCP with an example. **5**

Q.6 i. Define resolution. **2**

ii. What is proxy server? **3**

iii. Write a short note on HTTP and SMTP. **5**

OR iv. Explain URL. **5**

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Marking Scheme
EC3EL02 Data Communication & Computer Network

Q.1	i.	Which protocol suite is used by the current Internet? (a) TCP/IP		**1**
	ii.	Physical or logical arrangement of network is referred as- (b) Topology		**1**
	iii.	A simple parity check code can detect_____. (a) Odd number of errors		**1**
	iv.	_____ error detection method uses one's complement method. (d) Checksum		**1**
	v.	Header size of IPv4 is_____. (c) Between 20 to 60 bytes long		**1**
	vi.	_____ technique is used to create subnetting effect. (d) Proxy ARP		**1**
	vii.	UDP is _____protocol. (a) Unreliable, Connectionless		**1**
	viii.	_____bit checksum is used in SCTP. (c) 32		**1**
	ix.	_____ domain is used to map an address to a name. (b) Inverse		**1**
	x.	HTTP uses the service of TCP on well-known port _____. (c) 80		**1**
Q.2	i.	Each metrices Marks*4)	(0.5	**2**
	ii.	Each addresses	(1 Mars *3)	**3**
	iii.	Diagram Theorem	2 Marks 3 Marks	**5**
OR	iv.	Diagram Each Layer	1.5 Marks (0.5 Marks*7)	**5**
Q.3	i.	Define flow control Error control.	1 Mark 1 Mark	**2**
	ii.	ARQ protocol Go back-N ARQ protocol	1.5 Marks 1.5 Marks	**3**
	iii.	What do you mean by error detection Any one method of error detection with an example.	2 Marks 3 Marks	**5**
OR	iv.	Diagram Theory	3.5 Marks 1.5 Marks	**5**
Q.4	i.	Eacg error	(0.5 Mark*4)	**2**
	ii.	Difference	(1.5 Marks*2)	**3**
	iii.	Comparison	(1 Mark*5)	**5**
OR	iv.	Each cases Protocols	(1 Mark *2) 3 Marks	**5**
Q.5	i.	Write down the IANA ranges for port explanation)	(As per	**2**
	ii.	Give an example of a specific case, where UDP would make a good transport layer protocol. explanation)	(As per	**3**
	iii.	Each Comparison	(1 Mark*5)	**5**
OR	iv.	Explain the congestion control in TCP with an example.	(As per explanation)	**5**
Q.6	i.	Define resolution.	(As per explanation)	**2**
	ii.	What is proxy server? explanation)	(As per	**3**
	iii.	HTTP SMTP.	2.5 Marks 2.5 Marks	**5**
OR	iv.	Explain URL.	(As per explanation)	**5**

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