

Enrollment No.....



Faculty of Engineering
End Sem (Even) Examination May-2018
CS3CO18 Data Communication

Programme: B.Tech.

Branch/Specialisation: CSE

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. Guided media provides a conduit from one device to another, include **1**
 (a) Twisted pair cable (b) Fiber optic cable
 (c) Coaxial cable (d) All of these
- ii. Conversion of digital signal to analog signal is **1**
 (a) Modulation (b) Demodulation
 (c) Encapsulation (d) Bypass
- iii. Quadrature Amplitude Modulation (QAM) is a combination of **1**
 (a) ASK and FSK (b) PSK and FSK
 (c) ASK and PSK (d) None of these
- iv. Line coding schemes are for conversion of **1**
 (a) Analog signal to analog signal
 (b) Analog signal to digital signal
 (c) Digital signal to digital signal
 (d) All of these
- v. In star topology if central hub goes down, it effects **1**
 (a) One node (b) No node (c) Whole system (d) Don't know
- vi. A Circuit-Switched Network is made of a set of switches connected **1**
 by physical
 (a) Links (b) Media (c) Nodes (d) Lines
- vii. Two computers connected by an Ethernet hub are of **1**
 (a) LAN topology (b) MAN topology
 (c) WAN topology (d) None of these
- viii. Keyboard and traditional monitors are examples of **1**
 (a) Simplex devices (b) Duplex devices
 (c) Half Duplex devices (d) Full Duplex devices

- ix. In cyclic redundancy checking, the divisor is _____ the CRC **1**
 (a) One bit less than (b) One bit more than
 (c) The same size as (d) None of these
- x. In modulo-2 arithmetic, _____ give the same results **1**
 (a) Addition and subtraction (b) Addition and multiplication
 (c) Addition and division (d) None of these

- Q.2 i. Explain the modulation and demodulation of signal. **2**
 ii. Explain transmission mode & its type. **3**
 iii. Compare the different multiplexing technique. **5**
 OR iv. Explain the Shannon's theorem. **5**
- Q.3 i. Explain the different line coding. **4**
 ii. With the help of block diagram explain the working of frequency hopped spread spectrum. **6**
 OR iii. Find the Lempel-Ziv source code for the binary source sequence **6**
 0001001000000110000100000001000000101000010000001101000
 00001100.
- Q.4 i. Compare different switching techniques. **3**
 ii. Describe different types of topology. **7**
 OR iii. What is ATM protocol architecture? **7**
- Q.5 i. Compare OSI model with TCP/IP model. **4**
 ii. Explain the layers of OSI model. **6**
 OR iii. Explain the connecting devices in network. **6**
- Q.6 Attempt any two:
 i. Discuss and compare DLL, "Go Back n" and "Selective Repeat" protocol. **5**
 ii. Explain the mechanism of flow control protocol. **5**
 iii. Compute the CRC for a 10 bit sequence 1010011110 and a divisor of 1011. **5**

P.T.O.

Marking Scheme

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Q.1	i. Guided media provides a conduit from one device to another, include (d) All of these	1	1
	ii. Conversion of digital signal to analog signal is (a) Modulation OR (b) Demodulation	1	1
	iii. Quadrature Amplitude Modulation (QAM) is a combination of (c) ASK and PSK	1	1
	iv. Line coding schemes are for conversion of (c) Digital signal to digital signal	1	1
	v. In star topology if central hub goes down, it effects (c) Whole system	1	1
	vi. A Circuit-Switched Network is made of a set of switches connected by physical (a) Links	1	1
	vii. Two computers connected by an Ethernet hub are of (a) LAN topology	1	1
	viii. Keyboard and traditional monitors are examples of (a) Simplex devices	1	1
	ix. In cyclic redundancy checking, the divisor is _____ the CRC (a) One bit less than	1	1
	x. In modulo-2 arithmetic, _____ give the same results (a) Addition and subtraction	1	1
Q.2	i. Modulation of signal. 1 mark	2	2
	Demodulation of signal. 1 mark	3	3
	ii. 1 marks for each type with explanation	5	5
	iii. Compare the different multiplexing technique. Four difference each of them 1.25 mark (1.25 mark *4)	5	5
OR	iv. Shannon's theorem. Formula 2 marks	5	5
	Explanation 3 marks		
Q.3	i. Different line coding. Name 2 marks	4	4
	Clock Cycle 2 marks		
	ii. Diagram 2 marks	6	6
	Working of frequency hopped spread spectrum 4 marks		
OR	iii. Find the Lempel-Ziv source code for the binary source sequence 00010010000001100001000000010000001010000100000011010000001100.	6	6
Q.4	i. Different switching techniques 1 mark for each (1 mark *3)	3	3
	ii. Definition 1 mark	7	7
	Six types of topology 1 mark each (1 mark * 6)	6 marks	
OR	iii. ATM protocol architecture Diagram 3 marks	7	7
	Layer description 4 marks		
Q.5	i. Compare OSI model with TCP/IP model. 4 points 1 mark each (1 mark * 4)	4	4
	ii. Layers of OSI model. Layer stack 1 mark	6	6
	Layer description 5 marks		
OR	iii. Connecting devices in network. Each device 1 mark (1 mark * 6)	6	6
Q.6	Attempt any two:		
	i. "Go Back n" 2.5 marks	5	5
	"Selective Repeat" protocol. 2.5 marks	5	5
	ii. Mechanism of flow control protocol Diagram 2 marks	5	5
	Theory 3 marks		
	iii. CRC for a 10 bit sequence 1010011110 and a divisor of 1011. Correct answer 5 marks	5	5
