KADI SARVA VISHWAVIDHYALAYA

Subject Code: CE/IT-303

Subject Name: DATA COMMUNICATION AND NETWORKING

Date: 25.4.13 **Time:** 10:30 to 1:30 pm **Total Marks: 70**

Instructions:

1. Answer each section in separate answer sheet.
2. Use of scientific calculator is permitted.
3. All questions are Compulsory.
4. Indicate clearly, the option you attempt along with its respective question number.
5. Use the last page of main supplementary of rough work.

Section-I

Q-1 (A) What is data communication? Explain its components [5]

(B) Define terms. [5]

1. cycle
2. Periodic signal
3. Bandwidth
4. Frequency
5. Composite signal

(C) Differentiate Analog & Digital signal [5]

OR

(C) Explain Flow control , Error Control [5]

Q-2 (A) List out different topologies & Explain any two [5]

(B) Describe OSI model with its functionality only [5]

OR

(A) Give name and explain tree types of transmission impairments [5]

(B) Explain TCP/IP model with protocol only [5]

Q-3 (A) a non periodic composite signal has a bandwidth 200 kHz, with a middle frequency of 140 kHz and peak amplitude of 20 V. the two extreme frequencies have an amplitude of 0. Draw the frequency domain of the signal. [5]

(B) Explain Delta modulation [5]

OR

(A) the power of signal is 10 mW and the power of noise is 1 μW, what are the values of SNR and SNR_{dB} ? [5]

(B) Explain line coding scheme [5]

Section-II

Q-4	(A)	compares AM & FM with different characteristics	[5]
	(B)	what is multiplexing?, Describe Frequency division multiplexing	[5]
	(C)	Explain Fiber optic media in brief explain	[5]
		OR	
	(C)	Explain checksum with an Example	[5]
Q-5	(A)	list unguided transmission media and explain any one in detail	[5]
	(B)	what is error correction?, explain hamming distance with an example	[5]
		OR	
	(A)	Guided transmission media w.r.t. copper media only	[5]
	(B)	Explain CRC with an example	[5]
Q-6	(A)	Describe network IP classes with default subnet mask	[5]
	(B)	Explain DTE-DCE with necessary figure.	[5]
		OR	
	(A)	What is routing? Explain Dijkstra's algorithm	[5]
	(B)	List out networking devices and give it's functionality in short.	[5]

---Best of Luck---

KADI SARVA VISHWAVIDHYALAYA

B.E.Semester 3

Subject Code:-CE303/IT303 **Subject Name:-Data Communication and Networking**

Date:- 26/11/2013 **Time:-** 3 Hrs. **Total Marks:-70**

Instructions:

1. Answer each section in separate Answer sheet.
2. Use of Scientific calculator is permitted.
3. All Questions are **compulsory.**
4. Indicate **clearly,** the options you attempt along with its respective question number.
5. Use the last page of main supplementary for **rough work.**

Section-I

Q-1	**(All compulsory)**	
(A)	Explain OSI Model with each Layer in Detail.	**[5]**
(B)	Explain various Network Topology with advantages and disadvantages.	**[5]**
(C)	Explain different transmission modes with example.	**[5]**
	OR	
(C)	Explain TCP/IP Protocol Suite.	**[5]**
Q-2	**Answer the following question.**	
(A)	What is line coding? List various line coding schemes and explain three of them in detail.	**[5]**
(B)	Explain Pulse Code Modulation in detail.	**[5]**
	OR	
(A)	Explain Composite and Digital Signal in brief.	**[5]**
(B)	Explain Analog to Digital conversion in details.	**[5]**
Q-3	**Answer the following question.**	
(A)	Discuss Analog to Analog conversion in details.	**[5]**
(B)	What is Multiplexing? Explain Frequency Division Multiplexing and Time Division Multiplexing.	**[5]**
	OR	
(A)	Explain Wavelength Division Multiplexing in details.	**[5]**
(B)	Given a bandwidth of 6000Hz.Calculate baud rate and bit rate for ASK and PSK.	**[5]**

Section-II

Q-4 (All compulsory)

(A) Discuss various Guided and Unguided Media used in communication. **[5]**

(B) Explain the function of DTE and DCE with example. **[5]**

(C) What is CRC? Explain it with example. **[5]**

OR

(C) Define the term: Shannon capacity. What does the Shannon capacity have to do with communication? **[5]**

Q-5 **Answer the following question.**

(A) Explain hamming code method of error correction with example. **[5]**

(B) Explain Error Detection Mechanism Checksum in details. **[5]**

OR

(A) The code 11110101101 was received using the hamming encoding algorithm, what is the original code? **[5]**

(B) Explain Types of Errors. Explain Difference between Error Correction and Detection. **[5]**

Q-6 **Answer the following question.**

(A) Write short note on (a) Router and (b) Gateway **[5]**

(B) What is the role of routing algorithm in internetworking? Explain distance vector routing in detail. **[5]**

OR

(A) List and explain different connecting devices in detail. **[5]**

(B) Explain Link State Routing with example. **[5]**

.....All the Best.....

KADI SARVA VISHWAVIDHYALAYA

Subject Code: CE/IT-303

Subject Name: DATA COMMUNICATION AND NETWORKING

Date: 15/11/2014 Time: 10:30 AM to 1:30 PM Total Marks: 70

Instructions:

1. Answer each section in separate answer sheet.
2. Use of scientific calculator is permitted.
3. All questions are Compulsory.
4. Indicate clearly, the option you attempt along with its respective question number.
5. Use the last page of main supplementary of rough work.

Section-I

Q-1 (A) Explain different kinds of topologies / Categories of network. [5]

(B) Explain in brief Attenuation, Distortion, and Noise [5]

(C) Explain OSI model with its functionality. [5]

OR

(C) Explain TCP/IP model with protocol [5]

Q-2 (A) The power of a signal is 10 mW and the power of the noise is 1 μW; what are the values of SNR and SNRdB? [5]

(B) List three technique of Digital to Digital Conversion Explain any one. [5]

OR

(A) A nonperiodic composite signal has a bandwidth 200kHz, with a middle frequency140kHz and peak amplitude of 20 V. the two extreme frequencies have amplitude of 0. Draw the frequency domain of the signal. [5]

(B) Explain PCM in detail. [5]

Q-3 (A) List technique of Digital to analog Conversion. Explain any one. [5]

(B) Explain Delta Modulation in detail. [5]

OR

(A) List technique of analog to analog Conversion. Explain any one. [5]

(B) Explain Different types of Transmission modes. [5]

Section-II

Q-4	(A)	Explain Frequency Division multiplexing.	[5]
	(B)	Explain Types of Error.	[5]
	(C)	What is error correction? Explain correction technique	[5]
		OR	
	(C)	Explain Distance Vector Routing Protocol.	[5]
Q-5	(A)	Explain Guided Media in detail.	[5]
	(B)	Explain Time division Multiplexing.	[5]
		OR	
	(A)	Explain Unguided Media in Detail.	[5]
	(B)	list out error detection technique and explain any one	[5]
Q-6	(A)	Explains hamming distance and checksum with an example	[5]
	(B)	Explain DTE-DCE Interface.	[5]
		OR	
	(A)	Differentiate Switch and HUB ,Switch and Router	[5]
	(B)	Explain Link State Routing	[5]

---End---

KADI SARVA VISHWAVIDYALAYA

B.E SEMESTER III EXAMINATION (NOV/DEC 2015)

SUBJECT CODE: CE/ IT 303 **SUBJECT NAME: Data Communication and Networking**

DATE: 3/12/2015 TIME: 10.30 a.m. to 1.30 p.m. TOTAL MARKS: 70

Instructions:

1. Answer each section in separate Answer sheet.
2. Use of scientific Calculator is permitted.
3. Al Indicate **clearly**, the options you attempted along with its respective question number
4. Use the last page of main supplementary for rough work

SECTION 1

Q:1 (All Compulsory)

(A) Explain various categories of Network : LAN, WAN, MAN 05

(B) Define the term topology. Describe Star, Bus and Mesh topology 05

(C) Explain the three transmission mode in detail. 05

OR

(C) Explain classification of signals according to different criteria. 05

Q:2 (A) Compare OSI reference model with TCP/IP reference model. 05

(B) What is analog-to-analog conversion? Explain any two techniques for analog-to analog conversion in detail. 05

OR

(A) What are the differences between a port address, a logical address, and a physical address? 05

(B) Make a timing diagram and show the differences between Manchester encoding and differential Manchester encoding for the bit stream 10001011011 05

Q:3 (A) What is Multiplexing? Explain Time division multiplexing and Frequency division multiplexing. 05

(B) Explain transmission impairments in detail. Also explain types of errors in the data communication. 05

OR

(A) Explain Pulse Amplitude Modulation and Pulse Code Modulation 05

(B) Explain simple parity check code and checksum with example. 05

SECTION 2

Q:4		(All Compulsory)	
	(A)	What is CRC? Explain it with example	05
	(B)	Explain Hamming code method. The code 11110101101 was received using the hamming encoding algorithm, what is the original code?	05
	(C)	Given a bandwidth of 6000Hz.Calculate baud rate and bit rate for ASK, PSK and 8-PSK.	05
		OR	
	(C)	Explain ASK and 16QAM and draw 16QAM (2 Amplitude and 8phase) waveform and constellation diagram for the data stream 101111001110.	05
Q:5	(A)	Explain the function of DTE and DCE with example.	05
	(B)	How do guided media differ from unguided media? Explain guided media in detail.	05
		OR	
	(A)	What is Shannon capacity explain in detail.	05
	(B)	Differentiate cable modem and 56K modem	05
Q:6	(A)	Explain Classful IP Addressing scheme for IPV4.	05
	(B)	Describe Link state routing with example	05
		OR	
	(A)	List and explain different networking and internetworking devices in brief with necessary diagrams	05
	(B)	Describe Distance vector routing with example.	05

------All the Best------