GANPAT UNIVERSITY

B. Tech. Semester: IV (Computer Engineering/ Information Technology)

Regular Examination April – June 2015

2CE404/2IT404: Basics of communication systems

Time: 3 Hours   Total Marks: 70

Instructions: 1. Attempt all questions
2. Figures to right side indicated full marks.
3. Each section should be written in a separate answer book.
4. Be precise and to the point in your answer.

Section – I

Que. 1	(A)	Discuss User support layers in OSI Model.	[6]
	(B)	How can we send a digital signal from point A to point B? Explain the transmission of it.	[6]

OR

Que. 1	(A)	Explain internet layer in TCP/IP Protocol suite.	[6]
	(B)	Discuss the factors on which data rates depends. Discuss noisy and noiseless channel.	[6]
Que. 2	(A)	Discuss the modulation techniques.	[6]
	(B)	What is Digital to Digital Conversion? Discuss multilevel and scrambling techniques.	[5]

OR

Que. 2	(A)	Discuss Pulse code modulation.	[6]
	(B)	Differentiate ASK, FSK and PSK.	[5]
Que. 3	(A)	What is LATA? Describe services of it.	[5]
	(B)	The power of a signal is 10mW and the power of the noise is 1μW; What are the values of SNR and SNR_{db}?	[4]
	(C)	**Define the following terms:**	[3]
		1. Attenuation	
		2. Frequency domain	
		3. Jitter	

Section – II

Que. 4	(A)	Draw the structure of packet switch and explain all the components of it.	[6]
	(B)	Explain bus topology in details.	[4]
	(C)	Why are protocols needed?	[2]

OR

Que. 4	(A)	Explain frequency division multiplexing and demultiplexing technique.	[6]
	(B)	Discuss communication modes in details.	[4]
	(C)	Differentiate datagram network and virtual circuit network.	[2]

Que. 5	(A)	Discuss coaxial cable in brief.	[6]
	(B)	Explain synchronous time division multiplexing technique.	[5]

OR

Que. 5	(A)	Discuss the delay in datagram network and virtual circuit network.	[6]
	(B)	Discuss radio wave in brief.	[5]

Que. 6	(A)	Explain setup phase of virtual circuit network.	[6]
	(B)	**Answer the following Questions.**	[6]
	(i)	What are the advantages of multistage switch over cross bar switch?	
	(ii)	Define table lookup in the context of routing processor.	
	(iii)	For n devices in a network, what is the number of cable links required for ring, bus, and star topology.	
	(iv)	What is the difference between omnidirectional waves and unidirectional waves?	
	(v)	Define spread spectrum and its goal.	
	(vi)	What is the purpose of cladding in an optical fiber?	

END OF PAPER