paper code: U239-143 (ESE)

Total No. of Questions – [6]

Total No. of Printed Pages:

G.R. No.	

DECEMBER-2019 / ENDSEM

S. Y. B.TECH. (Information Technology) (SEMESTER - II)

COURSE NAME: Data Communication

COURSE CODE: ITUA21183

(PATTERN 2018)

Time: [2 Hours]

[Max. Marks: 50]

(*) Instructions to candidates:
1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Use of scientific calculator is allowed.
4) Assume suitable data where ever required.

Q.1)	**Attempt any one**		
	a)	Show with example the time domain and frequency domain representation of any signal and compare them. ***Any signal and its representations in time domain and frequency domain i.e. graphical form 2 marks each***	[4]
	b)	1. calculate freq. 2 Marks 2. Diagram with lable 2Marks	[4]
Q.2)	**Attempt any one**		
	a)	Compare and contrast: Frequency Division multiplexing and Time Division Multiplexing techniques. ***2 marks for 2 points in both FDM and TDM.***	[4]
	b)	Explain any two, line coding schemes with example ***1 mark for 1 point and 1 mark for representation in both schemes***	[4]
Q.3)	**Attempt any one**		
	a)	Draw and explain the types of FOC and their working principle. ***3 marks for Diagram and 3 marks for 1 point each in explanation***	[6]
	b)	Explain with example how the Virtual circuit networks work. ***3 marks for Diagram and 3 marks for 1 point each in explanation***	[6]

Q.4)	**Attempt any one**		
	a)	1) What Is Looping Problem of a Bridge? ***3 marks for Diagram and 3 marks for 1 point each in explanation*** 2) Draw and explain star and Mesh topology with diagram. ***2 marks for Diagram and 2 marks for explanation***	[6] [4]
	b)	1) Explain the TCP/IP layered model and functioning of all the layers. ***3 marks for Diagram and 3 marks for 1 point each in explanation*** 2) Explain why do we need three types of addressing in networks ***2 marks for types and 2 marks for explanation***	[6] [4]
Q.5)	**Attempt any one**		
	a)	1) Valid code word stepwise sender -2 M Valid code word stepwise receiever-2 M Method of checksum- 3 M 2)Explain go-back-n automatic repeat request in brief. ***3 marks for Diagram and 3 marks for explanation***	[7] [6]
	b)	1) What is the difference between forward error corrections versus transmission? ***1 mark each for at least 6 points, in explanation. examples expected*** 2) CRC division sender side 3 Marks Receiver side 3Marks	[7] [6]
Q.6)	**Attempt any one**		
	a)	1)Write the difference between TDMA and CDMA? which of these is better? ***1 mark each for 6 points of difference in explanation. examples expected*** 2) What are the controlled access methods? Explain with example. ***2 mark each for 3 methods' explanation.***	[7] [6]
	b)	1) Draw flow chart of CSMA/CA and explain its working in brief. ***4 marks for flowchart and 3 marks for explanation.*** 2) Explain pure and slotted aloha w.r.t. their throughput. ***3 marks each for 3 points of differences in explanation.***	[7] [6]