SY-PCOM-EXTC

K. J. Somaiya Institute of Technology, Sion, Mumbai-22
(Autonomous College Affiliated to University of Mumbai)

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(B.Tech) Program: Electronics and Telecommunication_Scheme I/II:_II
Examination: SY Semester: IV
Course Code: EXC404 and Course Name: Principles of Communication Engineering

Date of Exam: 30-08-23 Duration: 2.5 Hours Max. Marks: 60

Instructions:
(1)All questions are compulsory.
(2)Draw neat diagrams wherever applicable.
(3)Assume suitable data, if necessary.

Q No.	Questions	Max. Marks	CO	BT level
Q 1	**Solve any six questions out of eight.**	**12**	-	-
i)	Define noise in communication system	2	CO1	U
ii)	What is envelope in AM ?	2	CO2	R
iii)	what is frequency modulation ?	2	CO3	U
iv)	Define Sensitivity, selectivity	2	CO4	U
v)	Explain Natural sampling.	2	CO5	U
vi)	What is signal multiplexing?	2	CO6	R
vii)	What are the causes of fold over distortion or aliasing?	2	CO5	U
viii)	State types of AM	2	CO2	U
Q.2	**Solve any four questions out of six.**	**16**		
i)	Compare AM and FM.	4	CO3	U
ii)	Explain PWM system	4	CO5	U
iii)	Explain noise in communication system	4	CO2	U
iv)	Explain multiplexing in detail.	4	CO6	U
v)	A modulating signal $x(t)=10\cos(2\pi\times10^3t)$ is amplitude modulated with a carrier signal $c(t)=50\cos(2\pi\times10^5t)$ Find the modulation index, the carrier power, and the power	4	CO2	AP

	required for transmitting AM wave.			
vi)	Draw a neat block diagram of a superheterodyne radio receiver and explain the function of each block with waveforms.	4	CO4	U
Q.3	**Solve any two questions out of three.**	**16**		
i)	For a receiver with IF and RF frequencies of 455 KHz and 1050 KHz respectively. Determine: The Local Oscillator frequency Image frequency Image rejection ratio for a pre-selector Q of 90	8	CO4	Ap
ii)	Explain analog communication system in details	8	CO1	U
iii)	Explain Natural Sampling Method	8	CO5	U
Q.4	**Solve any two questions out of three.**	**16**		
i)	Explain TDM system	8	CO6	U
ii)	Explain reactance modulator in FM	8	CO3	U
iii)	Draw and explain the block diagram of the SSB filter method and explain how carrier and unwanted sidebands are suppressed?	8	CO2	U