Reg. No.												

Question Paper Code	11602

M.E. - DEGREE EXAMINATIONS, NOV/DEC 2022

Third Semester

M.E. - Communication Systems

20PCOEL306 - RADIO OVER FIBER TECHNOLOGIES

(Regulations 2020)

Duration: 3 Hours | Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level, CO
1.	State the advantages of RoF technology.	2,K1,CO1
2.	Define Noise figure of Passive Optical Microwave links.	2,K1,CO1
3.	What is nonlinearity in Laser diode?	2,K1,CO2
4.	Define QAM.	2,K1,CO2
5.	Mention the advantages of fiber optic over coaxial cable link.	2,K2,CO3
6.	Define Spontaneous emission rate.	2,K1,CO3
7.	Write the expression for threshold current in LD.	2,K1,CO4
8.	Mention the RF and Optical frequencies and Optical Wavelengths.	2,K2,CO4
9.	Draw the general architecture of UMTS.	2,K1,CO5
10.	List the parameters of WCDMA.	2,K1,CO5

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Explain the losses in Externally modulated Optical Microwave links.	13,K2,CO1
		OR	
	b)	Explain Indirect – Modulated Optical Links and its characteristics.	13,K2,CO1
12.	a)	Explain Laser Non linearity Harmonic distortion analysis for radio sub carrier multiplexed fiber optic transmission systems.	13,K2,CO2
		OR	
	b)	Explain Fiber optic Transmission of Microwave 64-QAM signals and its Signal to Noise ratio and Average BER analysis.	13,K2,CO2
13.	a)	Explain about the single fiber and two fiber bidirectional remote antenna feeding links.	13,K2,CO3
		OR	

b) Explain the analysis of a Laser diode by means of the Volterra theory. *13,K2,CO3*

14. a) Explain the modulation characteristics, frequency noise and linewidth of semiconductor lasers. *13,K2,CO4*

OR

b) Derive the expression for laser diode rate equations and threshold condition. *13,K2,CO4*

15. a) Draw and explain WCDMA Radio over Fiber System Configuration. *13,K2,CO5*

OR

b) Explain Radio over Fiber for HiperLAN2 Microcellular Communication networks. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Explain Natural sampling and basic configuration of Photonic TDMA. *15,K3,CO6*

OR

b) Explain the following with block diagram. (i) DOS-CDMA using Routing switch (ii) Photonic chirp multiple access. *15,K3,CO6*