Reg. No.												

Question Paper Code	21338

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

First Semester

M.E. - Communication Systems

20PCOPC103 - OPTICAL NETWORKS

(Regulations 2020)

Duration: 3 Hours | Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level,CO
1.	List the advantages and disadvantages of optical communication.	2,K1,CO1
2.	Compare Packet switching and circuit switching.	2,K2,CO1
3.	Discuss about the necessity of Isolators in Optical Networks.	2,K2,CO2
4.	Illustrate the characteristics of optical filters.	2,K2,CO2
5.	What is wavelength stabilization?	2,K1,CO3
6.	Describe the two types of cross talk.	2,K1,CO3
7.	Define SONET and SDH.	2,K1,CO4
8.	Realize the idea behind the digital wrapper.	2,K2,CO4
9.	Design an optical amplifier that can be used in a WDM.	2,K2,CO5
10.	How Tunable Lasers are found to be useful?	2,K1,CO5

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Explain the different multiplexing techniques in optical networks.	13,K2,CO1
		OR	
	b)	Explain the causes, limitations and minimization of self phase and cross phase modulations and also four wave mixing.	13,K2,CO1
12.	a)	Outline the features and applications of Optical Amplifiers & Optical switches.	13,K2,CO2
		OR	
	b)	Explain the construction and operating principle of Isolators along with necessary diagram.	13,K2,CO2
13.	a)	Discuss in detail about system model and power penalty of optical systems.	13,K2,CO3
		OR	

b) Summarize the entities which are involved in internet transport network protocol stack. *13,K2,CO3*

14. a) Evaluate the common aspects of generic framing procedure and also discuss about its client –specific aspects. *13,K2,CO4*

OR

b) Explain SONET and SDH Multiplexing hierarchy with a detailed diagram. *13,K2,CO4*

15. a) Summarize about Add/Drop Multiplexers with the help of a neat diagram. *13,K2,CO5*

OR

b) Design a DWDM wavelength plan with a neat diagram. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Describe the different types of protection switching scheme and different network topologies & their attributes with the help of necessary diagram. *15,K2,CO6*

OR

b) Explain about MPLS and Optical wavelength correlation. *15,K2,CO6*