Reg. No.												

Question Paper Code	11768

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2023

Eighth Semester

Electronics and Communication Engineering

EC8008 - PHOTONIC NETWORKS

(Regulations 2017)

Duration: 3 Hours | Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level,CO
1.	State the two main loss mechanism in optical fiber.	*2,K1,CO1*
2.	What is the need for couplers and isolators?	*2,K1,CO1*
3.	Define SONET layer.	*2,K1,CO2*
4.	List the topologies for broadcast networks.	*2,K1,CO2*
5.	Define Logically Routed network.	*2,K1,CO3*
6.	What is the principle of client layers of the optical layer?	*2,K1,CO3*
7.	Define Synchronization in Packet Switching Network.	*2,K1,CO4*
8.	What is meant by burst Switching?	*2,K1,CO4*
9.	Define Coherent crosstalk.	*2,K1,CO5*
10.	What is the system parameters associated with receiver?	*2,K1,CO5*

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Explain the fabrication of a simple 2x2 fiber optic coupler with a neat diagram. Derive its coupling length.	*13,K2,CO1*
		OR	
	b)	Explain the Isolators and Circulators in detail and its principle of operation.	*13,K2,CO1*
12.	a)	Show the layered architecture of optical networks in classical hierarchy with neat explanation.	*13,K2,CO2*
		OR	
	b)	Describe the frame structure and network configurations defined for SONET and SDH with diagrams.	*13,K2,CO2*

13. a) Discuss in detail about the routing and wavelength assignments (RWA) problem with reference to optical networks. *13,K2,CO3*

OR

b) Illustrate the Linear Light Wave Networks with neat sketch. Explain in detail. *13,K2,CO3*

14. a) Describe in detail about the Optical Time Division Multiplexing. *13,K2,CO4*

OR

b) Explain the operation of optical multiplexer and demultiplexer for bit interleaving with neat diagram. Also mention its applications. *13,K2,CO4*

15. a) Illustrate the transmission system engineering and its parameters. *13,K2,CO5*

OR

b) (i) Estimate the power penalty of two systems which has the same peak transmit power. *7,K2,CO5*

(ii) Describe the need for wavelength stabilization in an optical network. *6,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Explain the network management functions and describe fault management with suitable diagrams. *15,K2,CO6*

OR

b) Discuss in detail equipment, connection and adaptation management functions of configuration management. *15,K2,CO6*