

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

May-June 2026

(B. Tech) Program: EXTC Scheme :IIB

Regular Examination: LY Semester: VIII

Course Code:EXC801

Course Name: Optical Communication Networks

Duration: 02.5 Hours

Max. Marks: 60

Date of Exam: 19/05/2026

Instructions:

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

Q. No.	Question	Max. Marks	CO	BT level
Q 1	Solve any two questions out of three: (05 marks each)	10		
a)	Explain ray theory transmission in optical fibers.		CO1	U
b)	Explain spontaneous and stimulated emission.		CO3	U
c)	Explain functional Layers of SONET.		CO5	U
Q 2	Solve any two questions out of three: (05 marks each)	10		
a)	Explain how dispersion limits bandwidth.		CO2	U
b)	Discuss the functions of the Three port circulator.		CO4	U
c)	The refractive indexes of the core and cladding of a silica fiber are 1.55 and 1.52. Find the Critical angle, Numerical Aperture and Acceptance angle.		CO1	A
Q.3	Solve any two questions out of three. (10 marks each)	20		
a)	Explain the following with a neat diagram. Single mode step index fiber. Multimode step index fiber. Multimode graded index fiber.		CO1	U
b)	Draw the schematic of edge emitting double hetero junction LED and explain its working in detail?		CO3	U
c)	Explain following with diagram 1. UPSR 2. BLSR		CO5	U

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

May-June 2026		
(B. Tech) Program: EXTC Scheme :IIB		
Regular Examination: LY Semester: VIII		
Course Code:EXC801	Course Name: Optical Communication Networks	
Date of Exam: 19/05/2026	Duration: 02.5 Hours	Max. Marks: 60

Q.4	Solve any two questions out of three. (10 marks each)	20		
a)	Explain micro bending and macro bending effect on optical fibre.		CO2	U
b)	Explain EDFA amplifier with Population inversion principle. Also mention the advantages of EDFA over SOA amplifiers.		CO4	U
c)	Write note on 1. Optical safety 2. Crosstalk		CO6	U
