Max Marks: 60

# SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS, FEROZEPUR

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### B.Tech. || ECE|| 7th Sem

# **Optical Communication**

Subject Code: BTEC-702

Paper ID: Time allowed: 3 Hrs

**Important Instructions:** 

- All questions are compulsory.
- Assume any missing data

#### **PART A (2×10)**

- Short-Answer Questions:
  - (a) What is the basic principal of Optical Communication?
  - (b) Explain a block diagram of optical communication system.
  - (c) Write a short note on Splicing.
  - (d) A fiber of NA = 1, diameter =  $100 \mu m$  and area =  $90 \mu m^2$ . Calculate V-Number.
  - (e) What is a non-radiative and radiative radiation?
  - (f) Write down the full form of LASER, SONAR and LED.
  - (g) What are the advantages of optical fiber communication?
  - (h) Explain in detail Micro-bending and Absorption.
  - (i) Compare LED and Laser?
  - (j) What are different transmission windows of optical systems?

#### **PART B (8×5)**

	PART B (8×5)	000
	Explain in detail the different attenuating factors of Optical fiber.	CO2
Q. 2.		002
	What is dispersion? What are its types? What are its remedies?	CO2
201	What is dispersion? What are its types.  Explain in detail TDM, FDM, WDM multiplexing techniques.	CO5
Q. 3.	OR	005
	Write a short note on SCM multiplexing.	CO5
	Write a short note on SCM multiplexing.  Explain in detail the working of pn photo-detector. Why do we require pin	CO3
Q. 4.	Explain in detail the working of pri prior	
	photo-detector? OR	
	and stimulated emission?	CO3
	Compare and contrast between spontaneous and stimulated emission?	CO1
Q. 5.	Write a short note on MMF, OKIN and SSMI The	
Α.σ.	OR	COI
	Write a short note on Snell Law and Shannon capacity Theorem?	
	Wille discrem?	CO4
0.6	Explain in detail a WDM system with the help of a block diagram?  OR	
Q. 6.	OR OR	CO4
	What are different sources of power penalty? Explain in detail.	COT
	What are different sources of F	