SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS, FEROZEPUR

ROLL No: | | | | | | | | | | | | **Total number of pages:[1]**
Total number of questions: 06

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

Optical Communication

Subject Code: BTEC-702

Paper ID:

Time allowed: 3 Hrs **Max Marks: 60**

Important Instructions:

- **All questions are compulsory.**
- **Assume any missing data**

PART A (2×10)

Q. 1. 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 μm and area = 90 μm^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)

Q. 2. Explain in detail the different attenuating factors of Optical fiber. CO2

OR

What is dispersion? What are its types? What are its remedies? CO2

Q. 3. Explain in detail TDM, FDM, WDM multiplexing techniques. CO5

OR

Write a short note on SCM multiplexing. CO5

Q. 4. Explain in detail the working of pn photo-detector. Why do we require pin photo-detector? CO3

OR

Compare and contrast between spontaneous and stimulated emission? CO3

Q. 5. Write a short note on MMF, GRIN and SSMF fibers. CO1

OR

Write a short note on Snell Law and Shannon capacity Theorem? CO1

Q. 6. Explain in detail a WDM system with the help of a block diagram? CO4

OR

What are different sources of power penalty? Explain in detail. CO4