C

Reg. No. :

Question Paper Code: 57402

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2021

Seventh Semester

Electronics and Communication Engineering

15UEC702 - OPTICAL COMMUNICATION AND NETWORKS

(Regulation 2015)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. The most common light used in fiber-optic links is   CO1- R

   (a) Infrared   (b) Red   (c) Violet   (d) Ultraviolet

2. Which kind of dispersion phenomenon gives rise to pulse spreading   CO2- R
   in single mode fibers?

   (a) Intramodal   (b) Intermodal   (c) Material   (d) Group Velocity

3. Laser light is _____ emission..   CO3- R

   (a) Coherent   (b) Stimulated

   (c) Spontaneous   (d) Coherent and stimulated

4. Which type of preamplifier plays a crucial role in reducing the effect of thermal   CO4- R
   noise?

   (a) Low Impedance Pre-amplifier   (b) High Impedance Preamplifier

   (c) Trans impedance Preamplifier   (d) None of the above

5. In SONET, STS-1 level of electrical signaling has the data rate of   CO5- R

   (a) 51.84 Mbps   (b) 155.52 Mbps   (c) 466.56 Mbps   (d) None of the above

PART – B (5 x 3= 15 Marks)

6. When will the total internal reflection occurs in optical fiber?   CO1 R

7. Differentiate linear scattering from non-linear scattering.   CO2 R

8. Compare Surface and Edge emitting LEDs.   CO3 R

9. Why silicon is preferred to make fiber optical receivers?   CO4 R

10. Define – WDM and also list its advantages. CO5 R

<div align="center">PART – C (5 x 16= 80Marks)</div>

11. (a) Discuss the different types of optical fiber with relevant diagram   CO1- U   (16)

<div align="center">Or</div>

   (b) Explain about ray theory of a fiber with a special mention about TIR , critical angle and Numerical Aperture   CO1- U   (16)

12. (a) Explain various fiber splicing techniques   CO2- U   (16)

<div align="center">Or</div>

   (b) Discuss in detail about optical connectors   CO2- U   (16)

13. (a) Describe the construction and working of Edge emitting LED.   CO3- U   (16)

<div align="center">Or</div>

   (b) Explain working principle of Avalanche photo detector   CO3- U   (16)

14. (a) Explain the "Cut back Method" used for attenuation measurement.   CO4- U   (16)

<div align="center">Or</div>

   (b) Discuss the any type of dispersion measurements in optical fibers.   CO4- U   (16)

15. (a) Describe about WDM + EDFA system performance   CO5- U   (16)

<div align="center">Or</div>

   (b) Describe about SONET/SDH rings and networks   CO5- U   (16)

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