DAYANANDA SAGAR COLLEGE OF ENGINEERING,

Shavige Malleshwara Hills, Kumaraswamy Layout, Bengaluru-560078

Department of Telecommunication Engineering

Subject: OPTICAL COMMUNICATION AND NETWORKS

Sub Code : 17TE7DCOCN Faculty name: Mr.Jayanth.C

Module questions: 3&4

Q.No	Question Description	Marks

1. Explain the Basic elements of an analog link and the Major noise contributors at each stage.
2. i) Explain the Basic constituents of a generic RF over fiber link and with the help of diagram explain the Radio over fiber links.
   ii) With Relevant diagram discuss the subcarrier multiplexing.
3. With a neat diagram explain the Radio-over fiber concept of a broadband wireless access networks.
4. Explain the operation of Multichannel amplitude modulation standard technique for frequency division multiplexing of N independent information bearing signals.
5. Derive an expression for carrier to noise ratio of an analog optical fiber communication system under Photo detector, Preamplifier noises and Relative intensity Noise (RIN).
6. Discuss simplex point to point link and also explain the key system requirements which are needed in analyzing a link and how to fulfill these requirements.
7. What is link power budget? With an example explain the link power budget calculation.
8. What is rise time budget? Explain. Derive an expression for total rise or total system rise time.

   From chapters: Digital links and Analog links
   Solved examples: 8.2, 8.3,
   Unsolved examples: 8.1, 8.2,

Module-4:

1. Explain the operational principle and implementation of WDM and mention WDM Standards.
2. Discuss the layout of a basic 2 x2 Mach-Zehnder Interferometer and its equations.
3. Explain the optical isolators, optical circulators and operation of a Polarization of independent Isolator made of 3 miniature optical components.
4. Explain the operation of Optical ADD/DROP multiplexers and Dielectric thin filters with suitable diagrams.