



Reg. No. :

Name :

**First Semester M.Tech. Degree Examination, March 2014
(2008 Scheme)**

Electronics and Communication Engineering

Stream : Telecommunication Engineering

TTC 1005 : ADVANCED OPTICAL COMMUNICATION

Time : 3 Hours

Max. Marks : 100

Instruction : Answer **any five** questions. **All** questions carry **equal** marks.

1. Explain the working of EDFA, describing different pumping schemes used. What are the common wavelengths used for pumping ? Mention the demerit of choosing 800 nm.
 2. What is Gordon-Hans fitter, in the context of soliton based systems ? Considering this, compare performance of loss managed and dispersion managed solitons.
 3. Explain how solitons are formed by counter balancing action of GUD and SPM. Derive expression for peak power of fundamental soliton pulse.
 4. Compare BER performance of optical communication systems using FSK modulation format. Compare in terms of photons/bit required for BFR = 10^{-9} .
 5. Which optical amplifier offers the largest bandwidth ? Sketch the variations in gain coefficient of a fiber Raman amplifier as function of Raman shift. Assume fiber is made of pure silica and pumped at $1 \mu\text{m}$.
 6. Draw the block Schematic of a typical optical receiver. Explain each block in detail.
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