



# COLLEGE OF ENGINEERING, PUNE

(An Autonomous Institute of Government of Maharashtra.)  
SHIVAJI NAGAR, PUNE - 411 005

## End Semester Examination

### ET409 - (ET408) Broadband Communication TH

Course: B.Tech. (Old Structure)

Branch: Electronics and Telecommunication Engineering

Semester: Sem VIII

Year: 2014-2015

Max.Marks:60

Duration: 3 Hours Time:- 2.00 pm to 5.00 pm

Date: 19 NOV 2014

#### Instructions:

MIS No.

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1. Figures to the right indicate the full marks.
2. Mobile phones and programmable calculators are strictly prohibited.
3. Writing anything on question paper is not allowed.
4. Exchange/Sharing of anything like stationery, calculator is not allowed.
5. Assume suitable data if necessary.
6. Write your MIS Number on Question Paper.

**Q 1 a)** Draw and explain the architecture of FTTH system. State the major advantages and drawbacks of FTTH compared to other means of broadband communication. 6

**b)** What is PON? State the major types of PONs. State main features of any two types of PONs. 6

**Q. 2 a)** Draw the architectural schematic of Wi-MAX system. State the main features of Wi-MAX. 6

**b)** Explain the LMDS system of broadband communication. What is the frequency range and bandwidth of this system? What are the broadband applications for which LMDS is intended? 6

**Q. 3 a)** Explain the structure of an optical fiber. State the principle of communication of information through an optical fiber. State the types of LASERs used for optical fiber communication along with their advantages and limitations. 6

**b)** What are the principal frequencies of interest in the radio spectrum and to which applications, these frequencies are allocated? Also state the advantages and disadvantages of use of higher frequencies in the radio spectrum. 6

- Q. 4 a)** What is 'Quality of Service (QoS)' in relation to broadband communication? State the major parameters for evaluating QoS and their benchmarks that the service providers are expected to meet in order to assure QoS to broadband subscribers, as stated by TRAI. **6**
- b)** With the help of a neat architectural schematic, explain the GPRS scheme. Explain the role of GGSN and SGSN. **6**
- Q. 5 a)** Write short notes on
- i) UNII
  - ii) MMDS **6**
- b)** Draw a neat schematic showing the evolution of standards (along with their bit-rates) from 1G to 3G in both the hierarchies i.e. GSM path and CDMA path. Explain it in brief. **6**

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