COLLEGE OF ENGINEERING, PUNE

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

END Semester Examination

(ET(ILE)-14001) Broadband Communication

Course: B.Tech Branch: Electronics and TeleCommunication Engineering

Semester: Sem VII

Year: 2014-2015 Max.Marks:60

Duration: 3 Hours Time:- 02.00 pm - 05.00 pm Date: 20 NOV 2014

Instructions: MIS No. | | | | | | | | | |

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

1. (A) Explain the need for the technology development, happened in mobile communication from 1G technology to 4G technology. [5]
   (B) Explain principal of optical communication with different types of fiber optic cables. [5]

2. (A) What is TRAI and explain its role in Indian mobile communication market. [5]
   (B) Calculate the path loss for geostationary satellite operating in C-band for downlink transmission. [5]

3. (A) What are different types of satellites and explain their applications? [5]
   (B) What is meant by Fixed Wireless Communication and explain its uses in broadband communication. [5]

4. (A) Write note on: [5]
      I. GSM
      II. FTTH
   (B) Consider a mobile user is moving from base station BS1 to base station BS2. If the transmitted power from BS1 is 2W and distance between two base stations is 5km, then calculate the received power by mobile station MS from both base stations at a distance of 3km from BS1, in db. If the threshold received power, for call to be continued, is -110db, then calculate the distance at which hand-off should happen. ($P_r = P_t G_t G_r \lambda^2 / (4\pi)^2 d^2$) [5]

5. (A) Explain LMDS and MMDS technology in detail. [5]

(B) Consider a fiber optic cable with core $\eta_1 = 1.5$ and $\eta_2 = 1.3$, find out the minimum incident angle from core-cladding interface so that there is only reflection happening between core and cladding interface. Also find out the NA for fiber optic cable. [5]

6. (A) Explain WiMax technology and its standards. [5]

(B) What is mean by Quality of Service and what can be different parameters for analyzing QoS? [5]