**MAHARAJA AGRASEN INSTITUTE OF TECHNOLOGY**

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**Wireless Communications (ETEC 405)**

**Last Date: 17th October 2022**

***Assignment 1***

**Q.1** If a total of 33 MHz of bandwidth is allocated to a particular FDD cellular telephone system which uses two 25 kHz simplex channels to provide full duplex voice and control channels, compute the number of channels available per cell if a system uses (a) four-cell reuse, (b) seven-cell reuse, and (c) 12-cell reuse. If 1 MHz of the allocated spectrum is dedicated to control channels, determine an equitable distribution of control channels and voice channels in each cell for each of the three systems

**Q.2** Why in a densely populated area like Old Delhi, height of the Base Transceiver Stations is kept low?

**Q.3** What are the different ways by which we can increase the coverage area of the Mobile communication systems?

**Q.4** In a tabular format, list the operators in Delhi circle providing 2G, 3G and 4G services, also mention the number of channels allocated by TRAI to them.

**Q.5** If there is sudden increase in mobile users in a particular area like markets, stadiums and parks for a short period of time, what are the ways through which a mobile operator can provide uninterrupted services to them and thereby minimizing the blocking probability and drop call rate.