Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY
Manipal University

IV SEMESTER B.Tech. (E & C) DEGREE END SEMESTER EXAMINATION
MAY/JUNE 2016
SUBJECT: INTRODUCTION TO COMMUNICATION SYSTEM (ECE – 340)

TIME: 3 HOURS **MAX. MARKS: 50**

Instructions to candidates
- Answer **ANY FIVE** full questions.
- Missing data may be suitably assumed.

1A. Explain the block diagram of a RADAR system. Derive the radar range equation.

1B. What are the 2 types of RADAR displays. Explain.

1C. Explain the term Frequency Reuse in wireless communication

(5+3+2)

2A. Explain the mode theory of wave propagation in optical fibre. What are the 3 different types of modes in optical fibre?

2B. Find the core radius necessary for single mode operation at 1320 nm of a step index fibre with n_1=1.480 and n_2=1.478. What are the numerical aperture and maximum acceptance angle for this fibre?

2C. Write short note on intramodal dispersion in optical in optical fibres.

(5+3+2)

3A. What are the 3 types of satellite orbits based on altitude from earth? Compare the three.

3B. Explain attenuation in optical fibres due to absorption. Discuss the 3 mechanisms.

3C. a) Write true/false: All geosynchronous satellites are geostationary.

b) The line joining the apogee and perigee through the centre of earth is known as _____.

(5+3+2)

4A. Explain the Global Positioning System. How does it determine the location of a GPS receiver?

4B. Explain how scanning is performed in early FAX machines, with an example.

4C. Explain Zero IF receiver used in paging systems

(5+3+2)

5A. Explain the architecture of GSM system with neat schematic diagram.

5B. Explain the 3 methods used to improve coverage and capacity in wireless systems.

5C. What do you understand by the term fading in wireless communication. What are the factors that affect fading?

(5+3+2)

6A. What is multiplexing? Discuss about Time Division Multiplexing and Frequency Division

Multiplexing with suitable diagrams.

6B. Discuss the different WLAN standards.

6C. What is WDM? Explain how WDM increases the information capacity of an optical fibre.

(5+3+2)