



MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL

A Constituent Institution of Manipal University

Reg. No.

VI SEMESTER B.TECH. (COMPUTER AND COMMUNICATION ENGINEERING)

MAKEUP EXAMINATIONS, / 2017

SUBJECT: Wireless Communication and Computing [ICT 3251]

REVISED CREDIT SYSTEM

(13/06/2017)

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- ❖ Answer **ALL** the questions.
- ❖ Missing data may be suitably assumed.

- 1A. A Mobile Subscriber (MS) is at the boundary of the cell. How does the power of the cell site transmission affect the mobile device? Elucidate how the performance of the system is affected when cluster size varies. 5
- 1B. Illustrate any six types of services supported in a wireless environment. 3
- 1C. Differentiate between fast fading and slow fading. State any two techniques to resolve the effect of fading. 2
- 2A. Explain the components in the UMTS architecture using appropriate diagram. 5
- 2B. Depict the steps involved during call establishment in GSM and list the logical channels that supports each step. 3
- 2C. Differentiate between macro-diversity and micro-diversity techniques and justify the need of simulcast. 2
- 3A. State the need for routing algorithms in wireless communication. Using suitable examples, describe different categories of routing algorithms. 5
- 3B. Consider a base station having $h_T=30$ meters and a mobile antenna $h_R=2$ meters. The mobile is 1000 meters separated from base station. Compute the power received at the mobile station if the transmitted power is 29 dBm and the carrier frequency is 1 GHz. 3
- 3C. Mention the design goals which were incorporated while designing a CDPD networks? Deliberate on the various categories of services offered by CDPD networks. 2