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Total No. of Pages : 01

Total No. of Questions : 08

M.Tech.(ECE) EL-II (2016 Batch) (Sem.-2)

**MOBILE COMMUNICATION**

Subject Code : MTEC-205D

Paper ID : [74288]

Time : 3 Hrs.

Max. Marks : 100

**INSTRUCTIONS TO CANDIDATES :**

1. Attempt any FIVE questions
2. Each question carries EQUAL marks.

- Q1 Explain GSM Architecture and interfaces in detail with the help of suitable block diagram. Explain frame format and logical channels used in the GSM.
- Q2 What are the main features of a speech codec? Compare AMR and CELP codec. Briefly explain various steps used in speech processing in a vocoder.
- Q3 Why many current and future wireless communication standards prefer OFDM system over single-carrier communication system? What is the principle of OFDM system? With the help of proper mathematical expression, explain the generation and reception of OFDM signal using IFFT and FFT.
- Q4 Describe the concept of cyclic prefix in OFDM system. How it is useful to combat inter-symbol interference? Explain with the help of proper mathematical expressions and diagram.
- Q5 Define peak-to-average power ratio (PAPR) problem in OFDM system. What is the main reason behind this? Compare different methods used to reduce PAPR in OFDM system.
- Q6 Explain the principle of Rake receiver. Explain HSUPA system in detail. Write various parameters of physical layer of WCDMA standard.
- Q7 Explain, how CDMA standards of 2G and 3G uses the concept of spread spectrum and its usefulness in the context of commercial application. Explain different types of spreading codes used in 2G and 3G systems.
- Q8 Describe the key features of Wi-Max (IEEE 802.16). Explain the interworking of Wi-Max with LTE/LTE-Advanced networks. Explain seamless mobility in context to IEEE 802.21.