CBCS SCHEME

USN | | | | | | | | | |

15EC81

Eighth Semester B.E. Degree Examination, June/July 2019
Wireless Cellular and LTE 4G Broadband

Time: 3 hrs. Max. Marks: 80

Note: ***Answer FIVE full questions, choosing ONE full question from each module.***

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

Module-1

1 a. Explain the advantages of OFDM for LTE. **(08 Marks)**
b. Explain flat LTE SAE architecture. **(08 Marks)**

OR

2 a. Explain the following in brief,
(i) Pathloss and Shadowing.
(ii) Angular Spread and coherence distance.
(iii) Doppler spread and coherence time. **(09 Marks)**
b. Explain with a neat diagram, adaptive modulation and coding. **(07 Marks)**

Module-2

3 a. With a neat block diagram, explain OFDM communication system. Also mention the need of timing and frequency synchronization. **(09 Marks)**
b. Explain SC-FDMA uplink transmitter with a neat figure. **(07 Marks)**

OR

4 a. Explain spatial diversity of multiple antenna techniques. **(08 Marks)**
b. Explain open-loop MIMO in spatial multiplexing. **(08 Marks)**

Module-3

5 a. Explain the LTE Radio Interference protocols. **(08 Marks)**
b. Explain the transport channels in LTE. **(08 Marks)**

OR

6 a. Explain the hierarchical channel structure of LTE. **(08 Marks)**
b. Explain briefly layer mapping and precoding in modulation mapping. **(08 Marks)**

Module-4

7 a. Explain uplink control information. **(08 Marks)**
b. Explain the types of uplink reference signals. **(08 Marks)**

OR

8 a. Briefly explain the function of H-ARQ feedback in Downlink and Uplink transmission. **(08 Marks)**
b. Explain in brief types of Random Access procedure in LTE. **(08 Marks)**

Module-5

9 a. Explain the main services and functions of PDCP sublayer for the user plane. **(08 Marks)**
b. Explain RRC states and its functions. **(08 Marks)**

OR

10 a. Explain mobility management over the S1 transfer. **(08 Marks)**
b. Explain three basic approaches to mitigate ICI in downlink. **(08 Marks)**

* * * * *