CBCS SCHEME

USN | | | | | | | | | |

15EC81

Eighth Semester B.E. Degree Examination, Feb./Mar. 2022
Wireless Cellular and LTE 4G Broadband

Time: 3 hrs. Max. Marks: 80

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

Module-1

1 a. Explain the LTE network architecture. **(08 Marks)**
b. Explain the advantages and disadvantages of OFDM. **(08 Marks)**

OR

2 a. Explain the different techniques for mitigation of narrow band fading. **(08 Marks)**
b. Explain the following terms with respect to cellular system:
(i) Frequency Reuse (ii) Sectoring (iii) Handoff **(08 Marks)**

Module-2

3 a. Explain FDMA and TDMA techniques. **(08 Marks)**
b. With a neat block diagram, explain OFDM communication system. **(08 Marks)**

OR

4 a. With a neat diagram, explain SC-FDMA uplink transmitter. **(08 Marks)**
b. Explain the terms Array Gain and Diversity Gain with respect to multiple antenna transmission. **(08 Marks)**

Module-3

5 a. List the various Logical, Transport and Physical channels used in LTE. **(08 Marks)**
b. Explain the Radio Interface Protocol Stack of LTE. **(08 Marks)**

OR

6 a. Explain Type-1 frame structure of LTE. **(08 Marks)**
b. Explain Broadcast and Multicast channels. **(08 Marks)**

Module-4

7 a. With a neat block diagram, explain the overview of uplink transport channel processing. **(08 Marks)**
b. Briefly explain H-ARQ on uplink. **(08 Marks)**

OR

8 a. Explain the different power control schemes used in LTE. **(08 Marks)**
b. Explain the Random Access Procedure in LTE. **(08 Marks)**

Module-5

9 a. Explain the functions and services of PDCP sub layers for user plane and control plane. **(08 Marks)**
b. Explain mobility management over the SI interface. **(08 Marks)**

OR

10 a. Explain the RRC states and its functions. **(08 Marks)**
b. Explain the Intercell Interference Coordination in down link and up link. **(08 Marks)**

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