CBCS SCHEME

USN | | | | | | | | | | |

15EC81

Eighth Semester B.E. Degree Examination, July/August 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.

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.	What are the key enabling features of LTE?	(04 Marks)
	b.	Explain with necessary diagram LTE network architecture.	(08 Marks)
	c.	What are the advantages of OFDM in LTE?	(04 Marks)
		OR	
2	a.	Explain cellular concept in wireless communication.	(04 Marks)
	b.	Explain effect of fading in communication.	(06 Marks)
	c.	Explain coding and other learning technique with necessary encoder technique.	(06 Marks)

Module-2

3	a.	Explain basics of OFDM.	(04 Marks)
	b.	With necessary block diagram, explain OFDM and OFDM in LTE network.	(08 Marks)
	c.	Explain concept of SC-FDE.	(04 Marks)
		OR	
4	a.	Explain OFDM-FDMA, TDMA and CDMA.	(08 Marks)
	b.	Briefly explain with diagram, working operation of OFDM.	(08 Marks)

Module-3

5	a.	Explain design principles followed in LTE.	(08 Marks)
	b.	Explain logical and transport channels of LTE.	(08 Marks)
		OR	
6	a.	Explain convolution turbo coding.	(08 Marks)
	b.	Explain in brief multicast channels of LTE.	(08 Marks)

Module-4

7	a.	Explain uplink control information of LTE physical layer.	(08 Marks)
	b.	Explain formats of PUCCH 1, 1a, 1b, 2a, 2b.	(08 Marks)
		OR	
8	a.	Explain channel quality indicator and estimation techniques.	(08 Marks)
	b.	Explain non-synchronized random access procedure.	(08 Marks)

Module-5

9	a.	Explain what are the services and functions of PDCP.	(08 Marks)
	b.	Explain HRQ procedure, also in brief give the RRC states with explanation.	(08 Marks)
		OR	
10	a.	With timing diagram, explain mobility management over the SI interface.	(08 Marks)
	b.	What are the basic approaches to mitigate ICI in downlink?	(08 Marks)

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