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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/ COMMERCIAL PRACTICE, APRIL - 2025

MOBILE AND WIRELESS COMMUNICATION

[Maximum marks: 75] [Time: 3 Hours]

PART A

I. Answer all the following questions in one word or one sentence. Each question carries 1 mark.

(9 x 1 = 9 Marks)

		Module outcome	Cognitive level
1	The best assumed shape of a cell in cellular network is ……	M1.01	R
2	Expand the term TRAI ……..	M1.05	U
3	Interface between MS and BTS is called …….	M2.01	R
4	The modulation technique used in GSM is …….	M2.01	R
5	With respect to a cellular network, expand the term UTRAN.	M3.01	R
6	List any two applications of Bluetooth technology.	M3.04	R
7	Define process gain in WCDMA.	M3.01	R
8	Expand the term LTE with respect to mobile communication.	M4.01	R
9	Multiple access technique used in 5G technology is ……	M4.04	R

PART B

II. Answer any eight questions from the following. Each question carries 3 marks.

(8 x 3 = 24 Marks)

		Module outcome	Cognitive level
1	Explain TDMA concept.	M1.04	U
2	List any three important propagation effect on radio waves.	M1.03	R
3	List any three functions of SGSN in GPRS network.	M2.04	R
4	Explain CAMEL with respect to a Telecom Network.	M2.01	U
5	List the important features of Air interface in GSM.	M2.02	R
6	Describe the role of RNC in UMTS network.	M3.01	U
7	Explain IEEE 802.16 Wi-Max Technology.	M3.02	U
8	List any three features of 5G-NR.	M4.04	R
9	List the 3GPP release for LTE, LTE-A and 5G.	M4.04	R
10	Write a short note on Voice over LTE technology.	M4.01	U

PART C

Answer all questions. Each question carries seven marks.

(6 x 7 = 42 Marks)

		Module outcome	Cognitive level
III	Explain power control in GSM network.	M1.01	U
	OR		
IV	Describe different multiple access techniques used in Telecom network.	M1.04	U
V	Summarize the concept of hand off and different hand off strategies in mobile network.	M1.01	U
	OR		
VI	Explain the important steps of mobile cellular call scenario.	M1.02	U
VII	Describe the authentication process in GSM system.	M2.01	U
	OR		
VIII	Explain GPRS architecture with the help of block diagram.	M2.04	U
IX	Explain W-CDMA technology and spreading of signals.	M3.01	U
	OR		
X	Explain the architecture of UMTS technology with the help of block diagram.	M3.01	U
XI	Explain Bluetooth technology and its protocol stack.	M3.04	U
	OR		
XII	Summarize the key features of WLAN technology, advantages and disadvantages.	M3.03	U
XIII	Describe difference between IoT and M2M.	M4.04	U
	OR		
XIV	Explain architecture of 4G LTE network with the help of a block diagram.	M4.01	U

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