

**BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT**

(Autonomous Institute under Visvesvaraya Technological University, Belagavi)

USN Course Code      

Eighth Semester B.E. Degree Examinations, April/May 2025

**WIRELESS CELLULAR COMMUNICATION**

Duration: 3 hrs

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.  
2. Missing data, if any, may be suitably assumed

<u>Q. No</u>	<u>Question</u>	<u>Marks</u>	<u>(RBTL:CO: PI)</u>
<b><u>Module-1</u></b>			
1.	a. List and explain indoor path loss models.	10	(2 :1: 1.3.1)
	b. Explain the different types of multipath fading.	10	(2 :1: 1.3.1)
(OR)			
2.	a. Explain time-dispersive and frequency-dispersive channels.	10	(2 :1: 1.3.1)
	b. Write a short note on LCR and ADF.	10	(2 :1: 1.3.1)
<b><u>Module-2</u></b>			
3.	a. Explain in detail the different generations of cellular networks.	10	(2 :2: 1.3.1)
	b. Explain channel impairments and trunking theory in communication systems.	10	(2 :2: 1.3.1)
(OR)			
4.	a. Explain cell splitting with a neat diagram.	10	(2 :2: 1.3.1)
	b. Explain the concept of handoff in cellular networks with a neat diagram.	10	(2 :2: 1.3.1)
<b><u>Module-3</u></b>			
5.	a. Explain the principle of frequency division multiple access in wireless communication.	10	(2 :3: 1.3.1)
	b. Explain the principle of code division multiple access.	10	(2 :3: 1.3.1)
(OR)			
6.	a. Explain SSMA with a neat diagram.	10	(2 :3: 1.3.1)
	b. Compare Frequency Division Multiple Access (FDMA), Time Division Multiple Access (TDMA) and Code Division Multiple Access (CDMA).	10	(2 :3: 1.3.1)
<b><u>Module-4</u></b>			
7.	a. Explain the operation of AMPS with a neat diagram.	10	(2 :4: 1.3.1)
	b. Compare CDMA and GSM systems in detail.	10	(2 :4: 1.3.1)
(OR)			
8.	a. Explain general packet radio service with a neat diagram.	10	(2 :4: 1.3.1)
	b. Explain blue tooth network architecture with a neat diagram.	10	(2 :4: 1.3.1)
<b><u>Module-5</u></b>			
9.	a. Explain in detail capacity of MIMO channel.	10	(2 :5: 1.3.1)
	b. Explain the purpose and key features of space time coding.	10	(2 :5: 1.3.1)
(OR)			
10.	a. Explain multiuser MIMO and massive MIMO.	10	(2 :5: 1.3.1)
	b. Explain MIMO transmission techniques.	10	(2 :5: 1.3.1)

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