

Roll No. 

--	--	--	--	--	--	--	--	--	--

Total No. of Pages : 01

Total No. of Questions : 08

M.Tech (ECE) (Wireless Communication) (Sem.-3)

**MILLIMETER WAVE COMMUNICATION AND TECHNOLOGY**

Subject Code : ECE-301

M.Code : 74635

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTIONS TO CANDIDATES :**

1. Attempt any FIVE questions out of EIGHT question.
2. Each question carries TWELVE marks.

- Q1. a) Demonstrate the main challenges in utilizing a 60 GHz channel. 06
- b) Describe the millimeter wave characteristics. 06
- Q2. Distinguish millimeter Wave, UWB Radio, and optical wireless for Gigabit Wireless Communications. 12
- Q3. a) Why millimeter wave receiver preferred without local oscillator? 06
- b) Describe On/off keying modulation scheme with block diagram. 06
- Q4. Discuss the necessary parameters that should be used to compute the millimeter wave link margin. 12
- Q5. a) Discuss in detail about the need for beam steering and beam forming. 06
- b) Explain system model for phase array antennas in detail. 06
- Q6. Discuss acquisition and tracking algorithm for beam steering in detail. 12
- Q7. a) What do you mean by frame structure? Also discuss the role of frame structure to enable beam steering. 06
- b) Explain the significance of adaptive frame structure to reduce the CSF overhead. 06
- Q8. a) Discuss the spatial diversity for millimeter wave system in detail. 06
- b) Explain the diversity dimensions that are available for antenna arrays. 06

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**