RF ENGINEERING

2023-2024

(20IC302T)

Assignment (10 Marks)

S. No.	Name of the Experiment
1.	**(a).** What is 5G technology? How does it differ from 4G (LTE) technology? How does 5G achieve significantly faster data speeds compared to 4G? **(b).** What are the different frequency bands allocated for 5G, and what are their advantages and limitations?
2.	**(a).** How do 5G antennas differ from antennas used in previous generations of wireless technology, such as 4G? **(b).** What is beamforming, and how does it relate to 5G antennas? **(c).** What are the different types of 5G antennas, and how are they deployed in 5G networks?
3.	**(a).** Explain the basic principle behind RF energy harvesting? **(b).** What are the typical sources of RF energy that can be harvested in various environments? Can RF energy harvesting be used for powering small electronic devices or sensors? If so, what are some examples of such devices?
4.	**(a).** What does NFC stand for, and how does it differ from other wireless communication technologies like Bluetooth or Wi-Fi? **(b).** How does NFC support contactless payments, and what security measures are in place to protect financial transactions? **(c).** How does NFC contribute to the Internet of Things (IoT) ecosystem and device connectivity?
5.	**(a).** What is RFID, and how does it work as a technology for tracking and identifying objects? **(b**). How does RFID technology differ from other identification and tracking technologies, such as barcodes or QR codes?
Submission date: 23rd Oct. 2023	