



R20 Regulation

Subject code: 305FA

**TKR COLLEGE OF ENGINEERING AND TECHNOLOGY**

(Autonomous, Accredited by NAAC with 'A+' Grade)

**B.Tech V Semester Supplementary Examinations, November 2025**

**PRINCIPLES OF ELECTRONIC COMMUNICATIONS  
(IT)**

Maximum Marks: 70

Date: 12.11.2025

Duration: 3 hours

- Note: 1. This question paper contains two parts A and B.  
 2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.  
 3. Part B consists of 5 Units. Answer any one full question from each unit.  
 4. Each question carries 10 marks and may have a, b, c, d as sub questions.

**Part-A**

All the following questions carry equal marks (10X2M=20 Marks)				
		Marks	CO	BTL
1	Define modulation and classify?	2M	1	L1
2	What is meant by multiplexing and write its applications?	2M	1	L1
3	Define Phase modulation?	2M	2	L1
4	Write the advantages of digital modulation schemes?	2M	2	L1
5	Mention the advantages of LAN?	2M	3	L1
6	Write about local loop in telephones?	2M	3	L1
7	What is geometric shape of non-circular orbits?	2M	4	L1
8	What is the major application of fiber-optic cable?	2M	4	L1
9	What is handoff?	2M	5	L1
10	What are the functions of MTSO?	2M	5	L1

**Part-B**

Answer All the following questions. (5X10M=50Marks)				
		Marks	CO	BTL
11	Draw and describe the various frequency ranges in the electromagnetic spectrum with its applications.	10M	1	L2
OR				
12	Illustrate electromagnetic spectrum and clearly indicate all the bands.	10M	1	L2
13	a) Draw the block diagram of PCM system and explain. b) Define PWM and explain the concept of PWM using relevant waveforms.	5M 5M	2	L2
OR				
14	a) Explain the basic principle of frequency modulation. Also explain a method to generate FM signal. b) Explain a method to demodulate AM signal.	5M 5M	2	L2
15	a) Explain about paging systems. b) State the general operation of a cordless telephone.	5M 5M	3	L2
OR				
16	Discuss about Ethernet LANs in detail.	10M	3	L2

17	a) Discuss the advantages and disadvantages of satellite communications. b) Write some GPS applications.	5M 5M	4	L2
	OR			
18	Explain about fiber optic communication system and write down the applications.	10M	4	L2
19	Draw the block diagram of a RFID tag and explain.	10M	5	L2
	OR			
20	Write short notes on the following. a) RFID communication    b) UWB.	5M 5M	5	L2