R20 Regulation *Subject code:* **3O5FA**

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech V Semester Regular/Supplementary Examinations, February 2024

PRINCIPLES OF ELECTRONIC COMMUNICATIONS

(Information Technology)

Maximum Marks: 70 Date: 24.02.2024 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	CO	Bloom Tx
All the following questions carry equal marks (10x2M=20 Marks)			
1	Why is modulation required?	CO1	L2
2	Define gain and decibel.	CO1	L1
3	Compare passband transmission and baseband transmission	CO2	L1
4	Compare PAM, PPM and PWM.	CO2	L2
5	Write a short note on paging system.	CO3	L1
6	Define the terms LAN, MAN, and WAN.	CO3	L1
7	Mention the advantages and disadvantages of satellite communications.	CO4	L1
8	Mention various fiber optic cables	CO4	L1
9	What are the services offered by GSM?	CO5	L1
10	List the Advantages and Disadvantages of UWB.	CO5	L1
	Part-B		
Answer All the following questions. (5X10M=50Marks)		CO	Bloom Tx level
11	Describe the various frequency ranges in the electromagnetic spectrum with its applications. (10)	CO1	L2
	OR		
12	An amplifier has a gain of 45,000, which is too much for the application. With an input voltage of 20 μV, what attenuation factor is needed to keep the output voltage from exceeding 100 mV? Let A1 = amplifier gain = 45,000; A2 =attenuation factor; AT =total gain. (10)	CO1	L4
13	Discuss about amplitude modulation and demodulation with the help of a neat diagram (10)	CO2	L3
	OR		
14	a) Explain the working of QPSK modulator and demodulator. b) The input to an FM receiver has an S/N of 2.8. The modulating frequency is 1.5 kHz. The maximum permitted deviation is 4 kHz. What are i) the frequency deviation caused by the noise and ii) the improved output S/N? (4+6)	CO2	L2 L4

15	Explain the working of Telecommunication System with neat diagram. (10)	CO3	L2
	OR		
16	Describe the working of Ethernet and Token ring with neat diagram. (10)	CO3	L2
17	Discuss the elements of satellite communication systems. Explain each with a suitable block diagram. (10)	CO4	L2
	OR		
18	Describe about the optical communication system (10)	CO4	L2
19	a) Mention the two frequency reuse schemes and explain N-Cell reuse pattern in detail for four and seven cell reuse with illustrative diagrams. b) Discuss the performance criteria of the basic cellular system. (5+5)	CO5	L3 L2
	OR		
20	Explain about the wireless technologies Bluetooth and ZigBee. (10)	CO5	L2