QP Code: RJ23MTECH029 | Reg. No | | | | | | | | | | | AY 23

GIET UNIVERSITY, GUNUPUR – 765022

M. Tech (First Semester) Examinations, January – 2024

MPCEC1020 - Wireless and Mobile Communication

(ECE)

Time: 3 Hrs | Maximum: 70 Marks

(The figures in the right hand margin indicate marks.)

PART – A **(2 x 10 = 20 Marks)**

Q.1. Answer all questions	CO#	Blooms Level
a. What is the difference between 4G and 5G?	CO1	K1
b. Could you explain the meaning of Base Station Subsystem.	CO1	K1
c. What does the Near Far Problem refer to?	CO2	K2
d. Please provide definitions for Fast and Slow fading.	CO1	K2
e. Can you describe the concept of frequency hopping?	CO2	K1
f. Why is a link budget necessary?	CO3	K2
g. What are the CDMA Identities?	CO2	K1
h. How many channels are allocated in CDMA Forward Channels?	CO1	K3
i. Please list the merits and demerits of Okumara's model.	CO4	K1
j. Given a hopping bandwidth (Bss) of 600 MHz and a frequency step size (Δf) of 400 Hz, what is the minimum number of PN chips required for each frequency word?	CO4	K3

PART – B **(10 x 5=50 Marks)**

Answer ***ANY FIVE*** questions	Marks	CO#	Blooms Level
2. a. How does Practical Link Budget Design work using Path Loss Models?	5	CO1	K2
b. Could you explain the different methods of priority handoff.	5	CO1	K3
3.a. What are different wireless data services?	5	CO2	K2
b. What are the various methods that increase channel capacity and coverage?	5	CO2	K4
4. a. Can you explain Multiple Access methods with neat diagrams.	5	CO3	K2
b. Compare the principles and throughput of Slotted and Pure ALOHA.	5	CO3	K2
5.a. If a GSM system uses a frame structure where each frame consists of 8 time slots, and each time slot contains 156.25 bits, and data is transmitted at 270.833 kbps in the channel, find (i) the time duration of a bit (ii) the time duration of a slot	5	CO4	K1

	(iii) the time duration of a frame (iv) How long must a user occupying a single time slot wait between two successive transmissions?			
b.	Explain least mean square algorithm for adaptive equalization.	5	CO4	K2
6. a.	Explain the paging system with the help of block diagram.	5	CO2	K3
b.	Draw the architecture of ISDN and explain its working.	5	CO3	K2
7.a.	Write a short note on Polarization.	5	CO2	K4
b.	What is basic cellular system? Explain it with the help of a block diagram.	5	CO2	K2
8. a.	What are the differences between the Physical and logical channels of IS 95?	5	CO1	K3
b.	Calculate the capacity and spectral efficiency of a TDMA system using the following parameters:	5	CO2	K2

--- End of Paper ---