PAPER ID-421556

Subject Code: MTCS202

Roll No: | | | | | | | | | | | | | |

MTECH
(SEM II) THEORY EXAMINATION 2021-22
WIRELESS MOBILE NETWORKS

Time: 3 Hours ***Total Marks: 70***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **2 x 7 = 14**

Q no.	Question	Marks	CO
a	Explain the term TETRA.	2	1
b	How Handover is helpful to us?	2	1
c	What do you mean by UMTS?	2	1
d	Throw some light on DECT.	2	1
e	How LTE is important to us?	2	1
f	IMT-2000 played vital role in mobile communication justify your answer.	2	1
g	If I = 3 and J=0 What is the cluster size in cellular system?	2	1

SECTION B

2. Attempt any *three* of the following: **7 x 3 = 21**

Q no.	Question	Marks	CO
a.	Differentiate among FDMA, TDMA and CDMA. How message "Ajay" will be send from transmitter to receiver?	7	3
b.	How GEO, MEO and LEO are different from each other?	7	3
c.	Define the terms Multiplexing and Modulation with diagram.	7	3
d.	Explain Signal Propagation. How many types of delays do you know?	7	3
e.	Briefly explain the term signals. Is there any way to detect as well as correct the error in the signal? Write the steps of converting analog signal to digital signal.	7	3

SECTION C

3. Attempt any *one* part of the following: **7 x 1 = 7**

Q no.	Question	Marks	CO
a.	Explain all the components used in GSM architecture with neat and labelled diagram. Find the wave length of the signal whose frequency is 300 MHz.	7	3
b.	There are four stations (S1, S2, S3 and S4) S1 transmit 1, S2 transmit 0, S3 don't have any data to transmit and S4 transmit 1. Use CDMA to show that station S1 (Receiver Rx) receives data 0 from S2 (Transmitter Tx) station. Please solve it by making labelled neat diagram.	7	3

4. Attempt any *one* part of the following: **7 x 1 = 7**

Q no.	Question	Marks	CO
a.	Describe RFID and clarify the issues and challenges of the same. What may be the steps to write "Ajay Kr. Singh" in QR code. Throw some light on Application layer for mobile networks.	7	3
b.	Is the size of antenna depends on wavelength of the signal? If yes, how is it related? Give some examples of antenna. If the frequency of the signal is 3 lakh Hertz, then find the size of Antenna. Define Spread Spectrum.	7	3

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5. Attempt any *one* part of the following: 7 x 1 = 7

Q no.	Question	Marks	CO
a.	Explain the architecture of Bluetooth.	7	2
b.	What would be the channel capacity if noise is infinite show by Shannon equation? What is the roll of Nyquist criteria at receiving end?	7	2

6. Attempt any *one* part of the following: 7 x 1 = 7

Q no.	Question	Marks	CO
a.	What is demerit of ad-hoc network? Explain the different type of fading in wireless communication.	7	2
b.	Explain WAP architecture.	7	2

7. Attempt any *one* part of the following: 7 x 1 = 7

Q no.	Question	Marks	CO
a.	What do you mean by Handoff? Also explain frequency reuse. What is the difference between 3g and 4g? How 5g overcome the shortcoming of 3g and 4g?	7	2
b.	Explain the following Terms: - (i) File Systems (ii) Databases (iii) WWW (iv) Mobility.	7	2