



Regulation 17

Subject code:1E7DD

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech IV Year I Semester Supplementary Examinations, July 2022

CELLULAR AND MOBILE COMMUNICATIONS

(Electronics and Communication Engineering)

Maximum Marks: 70

Duration: 3 Hours

Part-A

All the following questions carry equal marks

(10x2M=20 Marks)

- 1 Name the wireless access techniques used in 1G and 3G.
- 2 List out advantages of cellular systems over conventional mobile telephone system.
- 3 Define frequency diversity.
- 4 List out advantages of cell sectoring.
- 5 Give the expression for standard deviation.
- 6 List out few service areas occurring in natural terrain.
- 7 List types of channel assignments.
- 8 State the purpose of setup channels.
- 9 Define dropped call rate.
- 10 List out advantages of handoff.

Part-B

Answer all the questions

(10M X 5=50 Marks)

- 11 (a) Explain about basic cellular system with neat figure. [5+5] M
(b) Write short notes on Fading.

OR

- 12 (a) A full duplex wireless cellular system is allocated a total spectrum of 25 MHz and each simplex channel has 30 KHz RF bandwidth. Determine the following [5+5] M
(i) Total number of duplex channels available.
(ii) Number of channels per cell site if $N=4$ cell reuse pattern is employed.
(b) Discuss the performance criteria of the basic cellular system.
- 13 Discuss about different methods to reduce the co-channel interference. [10] M

OR

- 14 Discuss different diversity techniques briefly. [10] M
- 15 Explain in detail about various mobile antennas. [10] M

OR

- 16 (a) Write short notes on use of 1-mi intercept. [5+5] M
(b) Discuss the effects of human made structures on cell coverage.
- 17 (a) Compare Omni and Sectorized cells for seven cell system in fixed channel assignment.
(b) Write short notes on channel borrowing and channel sharing. [5+5] M

OR

- 18 (a) Differentiate between FCA and non-FCA in detail. [5+5] M
(b) Explain in detail access channels and operational functions.
- 19 Explain about: [10] M
a) Intersystem handoff
b) Mobile assisted handoff
c) Forced handoff.

OR

- 20 (a) What is Handoff? Explain the handoff process in cellular systems. [5+5] M
(b) Explain about initiation of a handoff in detail.