



Regulation 18

Subject code: 2E6DA

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VI Semester Supplementary Examinations, June/July 2023

CELLULAR AND MOBILE COMMUNICATIONS
(Electronics and Communication Engineering)

Maximum Marks: 70

Date:27.06.2023 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 10 questions. Answer any 5 questions which carries 10M.
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)

- 1 List out steps involved in operation of cellular systems.
- 2 List out advantages of cellular systems over conventional mobile telephone system.
- 3 Define the gain of an antenna.
- 4 Define frequency reuse distance.
- 5 List out the types of antennas used at cell site.
- 6 Define foliage loss.
- 7 State purpose of paging channels.
- 8 What is dynamic channel allocation?
- 9 List out advantages of handoff
- 10 What is mobile assisted handoff.

Part-B

Answer all the questions (10M X 5=50 Marks)

- 11 Describe the frequency reuse concept in cellular communication system and derive the equation for the frequency reuse ratio. [10] M

OR

- 12 Explain briefly different ways of improving coverage and capacity in cellular systems. [10] M

- 13 Define cochannel cell .What are the different interferences in cellular systems .Explain each with neat figures. [10] M

OR

- 14 Discuss different diversity techniques briefly. [10] M

- 15 a) Discuss the effects of human made structures on cell coverage. [7+3] M

b) List the various merits of Lee model.

OR

- 16 a) Explain the mobile radio propagation over water and derive expression for power received.

- b) Explain how umbrella pattern antennas are used as the cell site antennas. [7+3] M
- 17 a) Explain about set-up channels. [4+6] M
- b) Explain non-fixed channel assignment algorithms.

OR

- 18 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
- 19 a) What is Handoff? Explain the handoff process in cellular systems.
b) Explain how handoffs are implemented based on signal strength. [5+5] M

OR

- 20 Explain about: [5+5] M
- a) Intersystem handoff
- b) Forced handoff.