R18 Regulation

Subject code: 2E6DA

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VI Semester Regular/Supplementary Examinations, June 2022

CELLULAR AND MOBILE COMMUNICATIONS

(Electronics and Communication Engineering)

Maximum Marks: 70

Date:20.06.2022 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 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 What is the effect of frequency reuse distance on cell reuse pattern?
2 Compare 1G, 2G, 3G and 4G cellular wireless systems.
3 Draw the Antenna equivalent circuit
4 List out various methods of reducing co-channel interference.
5 Discuss the Merits of Lee Model.
6 Give the significance of the Umbrella pattern Antennas
7 Write short notes on sectorization
8 Discuss the features of channel sharing
9 List the types of Handoff Mechanisms.
10 Differentiate between soft and hard Handoff.

Part-B

Answer All the following questions. (5X10M=50Marks)

11 Explain briefly different ways of improving coverage and capacity in cellular systems. (10M)

OR

12 A. Derive C/I from a normal case in a omnidirectional antenna system. (5M)
B. Write the advantages and disadvantages of 1G and 2G cellular systems. (5M)

13 Briefly discuss different diversity techniques. (10M)

OR

14 A. Mention different types of non-co-channel interference in a cellular system and Explain. (5M)
B. Discuss the various effects of antenna parameters on the interference in a cellular system. (5M)

15 Derive the path loss prediction model in non-obstructive condition. (10M)

OR

16 A. Discuss how antenna height effects the coverage and interference of cellular system. (5M)
B. Discuss the effects of human made structures on cell coverage. (5M)

17 A. Describe the concept of frequency management concern to the numbering the Channels and grouping into the subset. (5M
B. Describe the grouping of the voice and paging channels. (5M

OR

18 Describe in detail the adjacent channel assignment using omni-directional and directional antennas. (10M

19 Explain in detail the need for hand off and determine the probability of requirement of hand off. (10M)

OR

20 What is meant by handoff initiation? Explain the different methods of handoff initiation with suitable diagrams. (10M