

B.Sc. IT (Semester – 3rd)
CELLULAR AND MOBILE COMMUNICATION
SUBJECT CODE: BECE0F92
Paper ID: [OEI130406]

Time: 03 Hours **Maximum Marks: 60**

Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A **(2 marks each)**

Q1. Attempt the following:

- a. Differentiate between wireless and fixed telephone networks.
- b. Briefly define IEEE 802.11 services.
- c. What are the characteristics of cell-site antenna?
- d. What is the need of narrow beam concept?
- e. Which Cellular system uses the most bandwidth efficient modulation?
- f. What is a diversity receiver?
- g. Justify the hexagonal geometry of a cell.
- h. What do you mean by leaky feeder?
- i. What is the difference between cell splitting and cell sectoring?
- j. Write the disadvantage of long distance propagation. How can it be minimized?

Section – B **(5 marks each)**

Q2. What are the advantages and disadvantages of using CDMA for cellular networks?

Q3. How diversity techniques can be used to improve the link performance?

Q4. Explain any three types of handoffs and differentiate between proper and improve handoffs with suitable diagram.

Q5. Explain the frequency reuse concept in brief.

Q6. Compare the various wireless networks like PANs and LANs on the parameter of IEEE standards used.

Section – C **(10 marks each)**

Q7. Explain GSM system architecture and its main features and services in detail.

Q8. Define frequency management and channel assignment. Explain different types of channel assignment.

Q9. Write a short note on operational techniques explaining the concept of parameters of each technique.