

Total No. of Questions : 4]

SEAT No. :

PB-130

[Total No. of Pages : 1

[6269]-344

T.E. (Electronics & Telecommunication) (Insem)

CELLULAR NETWORKS

(2019 Pattern) (Semester-II) (304192)

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates :

- 1) Answers Q.1 or Q.2, Q.3 or Q.4.
- 2) Figures to the right side indicate full marks.
- 3) Neat diagrams must be drawn wherever necessary.
- 4) Assume Suitable data if necessary.

- Q1) a) Define and explain: Path loss, RF signal interference and Fading. [6]
b) Explain free space propagation model. Also write an equation of received power in free space propagation. [5]
c) Explain Diversity in Wireless Communications. [4]

OR

- Q2) a) Compute median loss for large city by considering Hata model at a distance of 3Km with carrier frequency of 2.1 GHz and transmitting and receiving antenna height as 20 m and 2 m respectively. [6]
b) With neat diagram explain ground reflection in wireless communication system. [5]
c) Explain channel estimation techniques. [4]

- Q3) a) What is concept of OFDM? List the advantages of OFDM. [5]
b) Calculate total no. of samples transmitted with cyclic prefix if total no. of subcarrier, $N=256$ & bandwidth per subcarrier = 15.625 KHz. [5]
c) What is importance of cyclic prefix in OFDM? [5]

OR

- Q4) a) Explain block diagram of multicarrier transmission system used in OFDM. [5]
b) Derive an expression for calculation of BER in OFDM system. [5]
c) Explain 3×3 MIMO System used in wireless communication. [5]

