

Total No. of Questions : 4]

SEAT No. :

PA-10289

[Total No. of Pages : 1

[6009]-344

T.E. (E & TC) (Insem)

CELLULAR NETWORKS

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

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates:

- 1) Answer any 2 questions Q1 or Q2, Q3 or Q4.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Use of logarithmic tables slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.
- 5) Assume Suitable data if necessary.

- Q1)** a) Draw block diagram to describe each components of Multicarrier Modulation transmitter and receiver. [8]  
b) With neat schematic, draw and explain in detail MIMO system model. [7]

OR

- Q2)** a) Draw neat diagram and Explain the working operation of OFDM transmitter and receiver with FFT. [8]  
b) Define Spectral Efficiency and Derive an expression for Loss in Spectral Efficiency. [7]

- Q3)** a) Derive an relation for least squares estimate in wireless systems. [8]  
b) With neat diagram, describe Ground reflection model for wireless communication. [7]

OR

- Q4)** a) With step by step process, explain how the Link Budget Analysis is prepared in wireless communication. [8]  
b) Derive an expression for Noise power. Compute Median loss for large city by considering HATA model at a distance of 3 km with carrier frequency of 2.1 GHz with transmitting and receiving antenna height as 20 m and 2 m. [7]

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