

Total No. of Questions : 8]

SEAT No. :

PB3837

[Total No. of Pages : 2

[6262]-99

T.E. (E & Tc Engineering)

CELLULAR NETWORKS

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

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.
- 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) Describe with neat diagram the significance of Cell Geometry in Cellular Networks. [6]
- b) With neat diagram explain various components of Cellular Network Architecture. [5]
- c) Write in brief, the Conception of cell splitting and Cell sectoring in Cellular Networks. [6]

OR

- Q2)** a) Explain in brief Frequency assignments and Frequency reuse channels in Cellular radio system design. [6]
- b) Define roaming. With neat diagram explain significance of roaming in cellular systems with algorithms. [5]
- c) Classify and explain with neat diagram the handover in cellular systems with Handoff algorithms. [6]

- Q3)** a) Write a brief note that includes a neat diagram of the wireless system's Tele-Traffic System model. [6]
- b) Explain the significance of link budget analysis for wireless systems. [6]
- c) Explain the term Blocking Probability and its expression to calculate the Blocking Probability. [6]

OR

P.T.O.

- Q4)** a) List and explain various impact does Teletraffic Theory possess on wireless system planning. [6]
 b) Explain the significance of steady state analysis process in wireless system planning process. [6]
 c) Explain in detail the link-budget expression for the required transmitted power. [6]

- Q5)** a) With diagram explain components of 5G Network Architecture. [6]
 b) Describe the operation of wireless local area network with diagram. [6]
 c) Explain in brief with diagram a LTE-A radio protocol Architecture. [5]

OR

- Q6)** a) Compare 3G and 4G mobile generation network. [6]
 b) Explain the operation of infrastructure based and adhoc WLAN with neat diagram. [6]
 c) With block diagram, explain GSM architecture. [5]

- Q7)** a) Explain one Scheduling algorithms for real-time traffic with diagram in mobile communication. [6]
 b) With neat diagram, explain in brief different steps in the scheduler design for mobile communication. [6]
 c) Explain with neat diagram, the operation of Network coding in mobile communication. [6]

OR

- Q8)** a) Explain Layered Analysis in mobile communication. [6]
 b) Explain in brief following QoS parameters : - [6]
 i) Throughput
 ii) Latency
 iii) Packet Loss
 c) Explain in brief following QoE parameters :- [6]
 i) Peak Signal to Noise Ratio
 ii) Video Quality Metric
 iii) Mean Opinion Score

