

Roll No .....

**CS-8303 (GS)**  
**B.E. VIII Semester Examination, June 2020**  
**Grading System (GS)**  
**Wireless Networks**  
**(Elective - III)**  
**Time : Three Hours**

**Maximum Marks : 70**

- Note:** i) Attempt any five questions.  
ii) All questions carry equal marks.

1. What should be a relationship between call arrival rate and service rate when a cellular system is in steady state? Explain clearly.
2. a) Discuss about the path loss modelling and signal coverage.  
b) Discuss briefly about channel measurement and modelling techniques.
3. Calculate the uplink cell load factor and number of voice user for WCDMA system using the following data. What is the pole capacity of the pole?  
Information rate ( $R_i$ ) = 12.2 Kbps  
Chip Rate ( $R_c$ ) = 3.84 Kbps  
Required  $E_b/N_t$  = 4 dB  
Required Interference Margin = 3 dB  
Interference Factor Due to other cells = 0.5  
Channel activity factor = 0.65
4. Why are multiple accesses required in LAN technologies? Compare FDMA, TDMA and CDMA in terms of their ability to handle groups of stations.
5. What do you mean by Doppler spectrum? How can we measure it?  
OR  
What is wireless network? Explain the characteristics of the wireless medium.
6. a) What do you understand by wireless ATM? Explain.  
b) What is the fundamental principle and use of spread spectrum?
7. a) What is Bluetooth? Explain the architecture of Bluetooth system in detail with suitable diagram.  
b) Write short note on IEEE802.15 WPAN network.
8. Write short notes on the following (any two)
  - a) Mobile Application protocols
  - b) 16 QAM
  - c) HomeRF
  - d) Cellular Topology

\*\*\*\*\*