IMPORTANT QUESTIONS

Class: IVECE Sub: **CMC**

1. Discuss the categories for specifying the performance criterion of a cellular System?

2. Explain about the Frequency Reuse concept with neat sketch?

3. Prove that k=7 cell patterns didn't provide a sufficient frequency reuse distance, Even when an ideal condition of flat terrain is assumed?

4. Design a directional antenna system for 3 sector and 6 sector case when K=7?

5. Derive the expression for the received power in ground reflected model?

6. Describe the Operation of Cellular system?

7. What are the limitations of conventional telephone system and explain?

8. Discuss the concept of frequency management concern to the numbering the channels and grouping into the subsets, setup channels, paging, and voice channels?

9. Discuss the effects of lowering antenna heights?

10. Explain the different types of Non co channel interference?

11. Discuss about LEE model?

12. Explain the diversity receiver.

IMPORTANT QUESTIONS

Class: IVECE Sub: **EMI**

1a) What are the Static characteristics of measurement systems? Explain.

b) Draw the Thermocouple type RF ammeter and explain its operation.

2.a) Explain the operation of function generator with a neat block diagram.

2.b) Explain the working of AF Sine and Square wave generator with a neat block diagram.

3.a) Explain digital storage oscilloscope with schematic block diagram and state its Applications.

3b). Write short notes on the following

a) Delay line b) CRO probes.

4. Write notes on the following

a) Series type Ohmmeter b) Shunt type Ohmmeter

4b). What are the different types of errors in measurement? Explain briefly.

5.a) Describe the circuits and working of Wave analyzers-Basic, Frequency selective, Heterodyne wave analyzers

5b) Explain the working of a Harmonic distortion wave analyzer using a block diagram.

6.a) Draw the internal structure of CRT and list its functions.

b) Explain the working of the Sampling Oscilloscope in detail with neat block diagram.

7a) Explain the working of a basic DC voltmeter. How can its range be extended?

b) Solve the value of multiplier resistance on the 50V range of a dc voltmeter that uses a 200μA meter movement with an internal resistance of 100Ω.

8.a) What is a Spectrum Analyzer? Discuss in detail its working principle with a neat block diagram.

b) Explain the working of Random noise generator with a neat block diagram.

9.a) Draw and explain the block diagram of vertical amplifier used in Oscilloscopes.

b) Describe in detail the Lissajous method of frequency measurement.

IMPORTANT QUESTIONS

Class: IVECE Sub: **SC**

1a) Describe the frequency allocations for satellite services and list the applications.

b) Write short notes on the future trends of satellite communications

2a) With the help of channeling scheme, explain the communications subsystem of a satellite.

b) Write short notes on spacecraft antennas.

3. Derive the expression for system noise temperature of a satellite link.

4. a)Explain in detail the geostationary orbit and its parameters.

b) With appropriate illustrations, explain the launch sequence of a geostationary satellite.

5a) Explain the TTC&M satellite subsystem with a neat diagram.

b) Describe the functions of satellite communication subsystem.

6. Explain the design of uplinks and downlinks in detail.

7.a) State the Kepler's laws. Discuss its importance in satellite communications.

b) Draw a basic block diagram of satellite communication system and explain each block in detail.

8a) Explain the attitude and orbit control system (AOCS) with necessary diagrams.

b) What are the various approaches used to improve the reliability of the satellite? Explain any one.

9a) Derive an expression for G/T ratio of an earth station receiver.

b) In a satellite link, the propagation loss is 200dB. Margins and other losses account for another 3dB. The receiver G/T is $11dBK^{-1}$ and the EIRP is 45dBW. Calculate the received C/N in dB for a system BW of 36MHz.

IMPORTANT QUESTIONS

Class: IVECE Sub: **WSN**

1a) Discuss the single node architecture of wireless sensor node with neat sketch.

b) Explain the advantages and applications of wireless sensor networks.

2 a)Analyze the hidden terminal and exposed terminal problems.

b) Explain the concept of MANETS.

3a) Illustrate the operation of Multi channel MAC Protocol with diagram.

b) Discuss the issues in designing a MAC protocol for AdHoc Wireless Networks.

4a) Explain the challenges and enabling technologies for wireless sensor networks.

b) Discuss in detail about the energy consumption of Sensor Nodes.

5a) Illustratevarious technologies used in PANs

b) Explain about WANETs and their characteristics

6a) Give the classification of MAC protocols in wireless sensor networks and explain about MACAW protocol.

b) Explain the frame structure of HRMA protocol with neat sketch.

7a) Define the following (i) Sensor (ii) Wireless Sensor node (iii) Wireless Sensor Network

b) Explain the network architecture in wireless sensor networks.

8a) Write in detail about Transceiver design considerations

b) Analyze the characteristics of bluetooth and zigbee technologies.

9a) Explain about any two contention based MAC protocols with scheduling.

b) Summarize the design goals of a MAC Protocol for Ad Hoc Wireless Networks.