

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

(Affiliated to JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD)
Gundlapochampally (H), Maisammaguda (V), Medchal (M), Medchal-Malkajgiri (Dist), Hyderabad

**IV B.TECH II SEMESTER REGULAR & SUPPLEMENTARY
EXAMINATIONS, MARCH-2018**

Branch: ECE

Subject: Satellite Communications

Time: 3 hours

Max. Marks: 75

PART – A**I. Answer All Questions****5x1Mark=5 Marks**

1. What is Satellite?
2. How the physical location of satellite is determined?
3. What is meant by Pitch angle?
4. What is the basic technique used to stabilize a satellite?
5. How transmission losses can be estimated?

II. Answer All Questions**10x2Mark=20 Marks**

1. What are the applications of satellites?
2. List out uplink components.
3. What are various the types of batteries used in the power system?
4. What is meant by spot beam antenna?
5. Define S/N ratio.
6. Explain cloud attenuation.
7. What is high power amplifier?
8. Explain the advantages and applications of earth station transmitters
9. Difference between pure ALOHA and Slotted ALOHA.
10. List the advantages of satellite packet switching.

PART-B**Answer All Questions****5x10 Marks= 50Marks**

1. Explain the process of locating the satellite in an orbit.
OR
2. What is meant by polar orbiting? Explain in detail.
3. Explain about Attitude Control subsystem
OR
4. Briefly explain the sources of noise in satellite communication. What is the importance of noise temperature in link design?
5. Discuss in detail about Frequency Division Multiple Access (FDMA)
OR
6. Explain CDMA Spread Spectrum Transmission and Reception
7. Write a notes on GPS Position Location Principles
OR
8. Explain about test equipments for earth station.
9. Discuss satellite internet accessing system.
OR
10. Explain about slotted ALOHA in detail.

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IV B.TECH II SEMESTER REGULAR END EXAMINATIONS, MARCH-2018

Branch: ECE

Subject: Radar Systems

Time: 3 hours

Max. Marks: 75

PART – A**I. Answer All Questions****5x1Mark=5 Marks****Radar Systems**

1. Define Maximum Unambiguous range and write the necessary equation
2. What are unwanted signals in FMCW altimeter?
3. Expand the 'stalo' and 'coho'.
4. What is Split-gate Tracker?
5. What is beam steering of phased arrays?

II. Answer All Questions**10x2Mark=20 Marks**

1. Define Radar Cross Section of a target.
2. Explain the operator and equipment degradation losses in radar systems.
3. Define Receiver Bandwidth.
4. Determine the beat frequency due to range and quantization error if range is 100m and the frequency excursion is 75 Hz and modulating frequency is 1 kHz.
5. What is staggered PRF?
6. What is Pulse Doppler radar?
7. Explain the principle of Split range gate.
8. What factors determine angular accuracies in radar?
9. What are the advantages of phased array antennas?
10. Explain how circulator can act as duplexer.

PART-B**Answer All Questions****5x10 Marks= 50Marks**

1. Explain the prediction of range performance.

OR

2. a) Describe the working principle of pulse radar system.
b) With a maximum of 250km range a radar is to be operated. Determine the maximum PRF.

3. a) With the help of block diagram, explain the functionality of CW Radar.
b) What are the various techniques of isolation between transmitter and receiver

OR

4. Explain the operation of nonzero intermediate frequency receiver and compare the same with zero IF receiver and bring out its advantages.

5. What is the difference between single canceller and double canceller in delay line cancellers? Explain.

OR

6. Explain the following limitations of MTI radar i) Equipment instability ii) Scanning modulation.

7. Explain the principle of operation of Amplitude comparison monopulse tracking with block diagram

OR

8. a) Discuss various acquisition search patterns
b) Compare various tracking techniques

9. Explain the principle and characteristics of a matched filter. Hence derive the expression for its frequency response function.

OR

10. Write short notes on various displays used in Radar.

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**IV B.TECH II SEMESTER REGULAR & SUPPLEMENTARY
EXAMINATIONS, MARCH-2018**

Branch: ECE

Subject: Telecommunication Switching Systems and Networks

Time: 3 hours

Max. Marks: 75

PART – A**I. Answer All Questions****5x1Mark=5 Marks**

1. Define time congestion
2. Explain the process of Conditional selection.
3. Draw the Signaling Systems of Inband Signaling
4. Explain the principle of operations of ATM.
5. What is protocol of stack/suite.

II. Answer All Questions**10x2Mark=20 Marks**

1. During the busy hours, 1200 calls were offered to a group of trunks and six calls were lost. The average calls duration was 3 minutes find: i) The traffic offered ii) The traffic lost.
2. Explain about manual switching.
3. Explain briefly the meaning of Progressive control and Common control.
4. Explain call processing function
5. State important specifications of CCITT signaling system
6. Write any four Common – Channel Signaling Principles
7. Write difference between Circuit Switching and Packet Switching.
8. List out the features of ATM networks.
9. Explain about intelligent network.
10. What are the different types of networks available in telecommunications?

PART-B**Answer All Questions****5x10 Marks= 50Marks**

1. a) What are the functions of switching systems? Explain.
b) Describe the mathematical model of the traffic offered to telecommunication System.
OR
2. Describe different traffic measurement units in Telecommunication network.
3. Explain about Time switching networks.
OR
4. Write about stored program control in detail.
5. Explain about PCM Signaling System with neat Diagram.
OR
6. Write a brief note on signaling systems in a Telecommunication networks
7. Explain various access methods used in LANs.
OR
8. Briefly explain about optical fiber networks.
9. Clearly explain about the Large Scale Network with examples.
OR
10. Explain ISDN protocol architecture. Write about signaling in ISDN

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**IV B.TECH II SEMESTER REGULAR & SUPPLEMENTARY EXAMINATIONS,
MARCH-2018**

Branch: ECE

Subject: Wireless Communications and Networks

Time: 3 hours

Max. Marks: 75

PART – A**I. Answer All Questions****5x1Mark=5 Marks**

1. Write any two key differences between 2G and 3G wireless communications
2. Explain about level crossing.
3. Define Coherence Time for fading channel.
4. List the type of architecture used in IEEE 802.11.
5. Define LOS propagation.

II. Answer All Questions**10x2Mark=20 Marks**

1. What do you mean by handoff?
2. Define wireless voice quality.
3. What are the limitations of Free Space Propagation Model?
4. What are merits and demerits of Okumara's model?
5. Differentiate flat and frequency selective fading.
6. List the different types of Small-Scale fading.
7. Mention the data rates achievable by Wi-Fi.
8. What is logical Link control protocol?
9. What are the drawbacks of CDPD networks?
10. Why was OFDM selected for WiMax?

PART-B**Answer All Questions****5x10 Marks= 50Marks**

1. a) Describe the evolution of wireless radio communication systems.
b) Mention the limitations of wireless networks
OR
2. a) Derive the equation for capacity of cellular system.
b) Explain about MTSO in cellular telephone system.
3. Explain in detail about knife-edge diffraction Model. Derive diffraction gain equation.
OR
4. What is diffraction and briefly explain about Fresnel Kirchoff diffraction model.
5. Define Doppler spread and explain about spectral shape in Clarke's model for flat fading channel.
OR
6. Derive Impulse Response for multipath flat fading channel.
7. a) Draw the configuration of IEEE802.11 architecture?
b) Explain the physical layer specifications of IEEE802.11 using infrared?
OR
8. Explain IEEE 802.11 medium access control.
9. Discuss functional key differences between GPRS and GSM systems in detail.
OR
10. Give the details of short messaging service in GPRS mobile application protocols.

