VIII Semester Btech Degree Examination
08.802 RADAR & TELEVISION ENGINEERING (T)

(Model Question Paper)

Part –A Answer all questions (10x4=40)

1. Derive the basic RADAR Range equation.
2. Draw the block schematic of a pulsed radar and explain its working.
3. Briefly explain Radio Compass receiver.
4. Explain the video detector and sound trap circuit in TV Receiver.
5. With the help diagram give the details of the Composite Video Signal.
6. Explain how the colour information is accommodated within the same channel bandwidth of 7 MHz. Why is the (G- Y) difference signal not chosen for transmission?
7. Briefly describe a) Keyed AGC b) AFC
8. How compression is achieved using DCT?
9. Briefly explain working of LCD TV.
10. Briefly explain different source coding techniques for video.

Part –B
Answer any two questions from each module

Module-I

11. Explain MTI radar with block diagram.
12. Explain the operation of Distance measuring equipment.
13. Explain FM-CW Radar .

(10x2=20)

Module-II

14. Give details of Composite colour video signal. What is the need of serrations and equalizing pulses? Draw relevant diagrams.
15. With the help of block diagram explain the encoding process in the PAL colour system. How the phase-error is corrected in the PAL system?
16. Explain with suitable block diagrams the SECAM encoder and decoder.

(10x2=20)

Module-III

17. Explain MPEG-2 video compression with necessary block diagram.
18. Explain DVB-T –OFDM transmission.
19. Describe the principle of Digital TV over IP and for Mobile.

(10x2=20)

Eighth Semester B.Tech Degree Examination, April 2012

(2008 Scheme)

08. 803-COMPUTER COMMUNICATION(T)

Time: 3 Hours   Max.Marks:100

Instructions: 1)Answer **all** questions in Part **A**. **Each** question carries **4** marks.

2) Answer **any two** questions **from each** Module in Part **B**. **Each**

question carries **10** marks.

PART –A

1. What is Framing?
2. Explain Stop and Wait Protcol.
3. Differentiate between Switch and Bridge.
4. Explain ICMP.
5. Differentiate between IPv4 and IPv6.
6. Explain BGP.
7. Explain the concept of Virtual Private Network(VPN). Where it is being used?
8. Discuss the functions of Firewall.
9. Discuss any one of message integrity protocol.
10. What is the significance of Ethernet Passive Optical Networks?

PART B
MODULE-I

11. With the help of an example explain any flow control technique/protocol.

12. Discuss the functions of different layers of OSI reference model.

13. Explain the following .

    (a)SONET   (b) HDLC

MODULE II

14. Explain Shortest Path Protocol with the help of an example.

15. Discuss TCP based congestion avoidance techniques.

16. Explain how a network is partitioned into different subnets.

MODULE III

17. Explain MD5 Algorithm

18. Discuss security in Application Layer.

19. Write notes on the following .

    (a)TLS   (b) SSL

Eighth Semester B.Tech Degree Examination
08.804   SATELLITE & MOBILE COMMUNICATION (T)

Max. Marks 100
Time 3 hours

Part A
(Answer all questions)

1. State and explain Kepler's law.
2. Define angle of elevation and azimuth.
3. List the advantages and disadvantages of geosynchronous orbits.
4. Determine the total noise power for a satellite receiver with an input bandwidth of 20 MHz and an equivalent noise temperature of 600K.
5. Explain the concept of frequency reuse.
6. Explain the four steps involved in the hand off process.
7. Determine the number of cells in clusters for the following values: j=4 and i=2 and j=3 and i=3.
8. Explain the factors influencing small scale fading.
9. What are the major user services offered by GSM?
10. Explain the operation of mobile IP.

(4 * 10 = 40 marks)

Part B

(Answer two questions from each module)

Module I

11. Explain how intermodulation noise originates in a satellite link and describe how it may be reduced?

12. Calculate the % of total earth surface visible from a satellite with a minimum elevation angle of 10° and an altitude of 24000 km.

13. Find out the expression for (C/N) for uplink and downlink of a satellite communication system.

Module II

14. What are the major sources of interference in the performance of cellular radio system? Explain.

15. If a signal to interference ratio of 15 dB is required for satisfactory forward channel performance of a cellular system, what is the frequency reuse factor and cluster size that should be used for maximum capacity if the path loss exponent n=4.

16. List the indoor and outdoor propagation models. Explain any one outdoor propagation model.

Module III

17. With necessary diagrams and equations explain direct sequence spread spectrum system.

18. A CDMA cellular system uses SDMA, and multiple cells are used, where each cell shares the same radio channel. Consider propagation path loss exponents of n=2,3, and 4, and determine the number of simultaneous users that can be supported at an average probability of error of 10^{-2}. Assume K=511 and 6 dB of directionality is provided by the base station for each user.

19. Write notes about FEC coding, multi user detection and MIMO.

(6 * 10 = 60 marks)

MODEL QUESTION PAPER

Eight Semester B.Tech Degree Examination
(2008 Scheme)

08.825 MICROWAVE DEVICES AND CIRCUITS

Time : 3 hrs

Max Marks: 100

Instruction : Provide Smith Chart to students on their request

PART – A

Answer all questions. Each question carries 4 marks.

1. Explain the important properties of Scattering Parameters.
2. Derive expressions for S parameters in terms of Z parameters.
3. Write a brief note in Double Stub Tuning.
4. Explain the operation of MESFET.
5. Explain GUNN EFFECT.
6. Explain the Limited Space Charge Accumulation mode of GUNN Diode.
7. Explain the operation of a TRAPATT diode.
8. What do you mean by Stripline ? What are its disadvantages ?
9. Discuss about any two types of discontinuities in microwave integrated circuits.
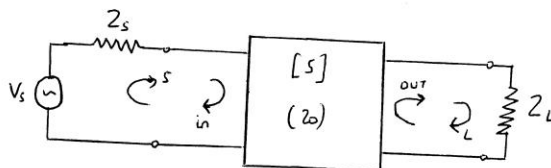10. Write a brief note on planar resistors.

(4 X 10 = 40)

PART – B

Answer any two questions from each module. Each question carries 10 marks.

MODULE – I

11 Explain how equivalent voltages and currents are defined for waveguide modes.

12. Explain about signal flow graph. Using signal flow graph, derive expressions for Γ_{in} for the terminated two port network shown in figure:

13. Design a single stub tuning network to match a load impedance of $Z_L = 15 + 10j\Omega$ to a 50Ω line. Assume that the load is matched at 2 Ghz and the load consists of resistor and inductor in series.

MODULE – II

14. Explain the different modes of operation of a GUNN diode? What are the different Gunn Oscillation modes ?

15 With the help of neat diagrams explain the structure and working of IMATT diode

16. Explain the steps involved in the design of single stage transistor amplifier.

MODULE – III

17. Explain the even mode and odd mode of operation of a coupled stripline.

18. Explain how capacitors are implemented in MICs.

19. Discuss about the different configurations of print inductors used in MICs.

(6 X 10 = 60 marks)