

Code : 1G385

R-11

IV B.Tech. II Semester Regular Examinations April 2015

Wireless Communication Networks
(Electronics & Communication Engineering)

Max. Marks: 70

Time: 03 Hours

Answer any five questions

All Questions carry equal marks (14 Marks each)

1. a) Explain about the wireless vision and Technical issues in wireless domain. 9M
b) Write short notes on available Wireless standards. 5M
2. a) Explain about the features of TDMA 7M
b) Write short notes on
(i) CSMA
(ii) Reservation protocols 7M
3. a) Write short notes on Broadband ISDN and its services. 7M
b) Explain about Traffic Routing in wireless networks. 7M
4. a) Explain about Mobile IP Registration Process. 7M
b) Discuss about Wireless Transaction protocol. 7M
5. a) Explain about the configuration and Transmission issues of Spread spectrum LANs. 6M
b) Discuss about the requirements of Wireless LANs. 8M
6. a) Explain about the Radio specification and Baseband specification in Bluetooth. 9M
b) Write short notes on WLL technology. 5M
7. a) Explain about the architecture of CDPD network with a neat diagram. 7M
b) Explain the protocol layers in GPRS. 7M
8. a) Explain the architecture of a wireless ATM network. 7M
b) Discuss about the format of HIPERLAN activities. 7M

Answer *any five* questions

All Questions carry equal marks (14 Marks each)

1. a) Describe the limitations of conventional mobile telephone systems 7M
 b) Discuss clearly about Basic Cellular System with the help of a block diagram and explain the function of each unit in the system. Hence bring out the merits and demerits of cellular system 7M
2. a) Describe the concept of frequency reuse channels and frequency reuse distance 7M
 b) Describe the cell splitting and sectoring techniques for improving coverage area and capacity of cellular systems 7M
3. a) Describe the real-time co-channel interference measurement at mobile radio transceivers 7M
 b) Explain the effect of lowering the antenna height to reduce co-channel interference 7M
4. a) Derive the expression for the phase difference between a direct path and a reflected path 7M
 b) Explain the general formula of a point-to-point model (Lee model) and also mention the merit of the point-to-point model 7M
5. a) Explain sum and difference patterns and their synthesis 7M
 b) What antennas is used for interference reduction and explain in detail? 7M
6. a) Explain the concept set-up channels related to frequency management of cellular system 7M
 b) Define Channel Assignment. Explain the channel sharing and borrowing concept in mobile communications 7M
7. a) Explain how an Initiation of a Handoff takes place and also explain the concept of delaying a handoff 7M
 b) What is Queuing of Hand offs? Obtain an expression for blocking probability of originating calls and discuss its characteristics 7M
8. a) Compare GSM versus CDMA system. What are various advantages of CDMA system compared to GSM 7M
 b) Show the functional architecture of GSM and explain the sub systems 7M

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Digital Image Processing
(Electronics & Communication Engineering)

Max. Marks: 70

Time: 03 Hours

Answer any five questions

All Questions carry equal marks (14 Marks each)

1. a) Discuss about Digital Imaging system and its classification. 7M
b) How an image pixels are related? Explain. 7M
2. Discuss in detail about DCT, Haar and Slant Transforms. 14M
3. a) Write short notes on
i) Spatial filtering
ii) Histogram equalization. 7M
b) Discuss how the histogram is useful for image enhancement. 7M
4. a) Explain the Spatial domain methods for image enhancement. 7M
b) Explain the method of image enhancement in frequency domain. 7M
5. a) What is meant by pseudo color image processing? Explain. 7M
b) What is meant by color model? Why it is necessary? Explain different color models. 7M
6. a) What is inverse filtering? Explain in detail. 7M
b) Discuss about thresholding and optimal thresholding. 7M
7. a) Explain how discontinuities can be detected in an image. 7M
b) Discuss about region based segmentation with neat sketch. 7M
8. a) Discuss various compression techniques with suitable examples. 7M
b) Differentiate between lossy and lossless compression techniques. 7M

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DSP Processors and Architectures
(Electronics & Communication Engineering)**Max. Marks: 70****Time: 03 Hours**

Answer any five questions

All Questions carry equal marks (14 Marks each)

1. a) Explain the issues of Pipelining in P-DSPs 7M
b) Mention the special Addressing modes in P-DSPs 7M
2. a) Explain Dynamic range and its Precision 7M
b) Calculate the Dynamic range and precision of the following number representation formats
i. 32-bit single-precision, fixed-point format
ii. A floating-point format with a 32-bit mantissa and an 16-bit exponent 7M
3. Describe the necessary computation building blocks required for DSP computations, also explain taking the example of Parallel Multiplier. 14M
4. Discuss the Data Addressing Modes of TMS320C54xx Processors 14M
5. a) Implement the PID Controller using relevant DSP algorithm. 7M
b) Explain the implementation of Adaptive Filters. 7M
6. a) What minimum size FFT must be used to compute a DFT of 40 points? What must be done to the samples before the chosen FFT is applied? 7M
b) Derive the optimum scaling factor for the DIF FFT butterfly. 7M
7. a) Write a brief note on External Bus Interfacing Signals 7M
b) How does DMA help in increasing the processing speed of a DSP Processor? 7M
8. a) Write an overview of OMAP. 7M
b) Compare the performance of the systems designed using FPGAs and DSPs. 7M
