Hall Ticket Number :										

R-14

Code: 4G381

IV B.Tech. II Semester Advanced Supplementary Examinations May/June 2018

Cellular and Mobile Communications

(Electronics & Communication Engineering)

Max. Marks: 70 Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 14 = 70 Marks)

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UNIT–I

1. a) Write short notes on the operation of cellular system without design parameters 7M
   b) Explain the uniqueness of mobile radio environment. 7M

OR

2. a) Enlighten the concept of frequency reuse channels. 7M
   b) Give explanation the consideration of components of cellular systems. 7M

UNIT–II

3. a) How to reduce the co-channel interference by lowering the antenna height? 7M
   b) With neat sketch explain the co-channel interference reduction by means of notch in the tilted antenna pattern. 7M

OR

4. a) Design an omnidirectional antenna system in worst case for C/I ratio with k=7. 7M
   b) Compare Space Diversity and Frequency Diversity and what are the advantages of Space Diversity in mobile communications. 7M

UNIT–III

5. a) Define Umbrella Pattern. What are the benefits of Umbrella Pattern? 7M
   b) Explain antenna configurations used at cell site for coverage. 7M

OR

6. Obtain the path loss from point-to-point prediction model in obstructive and non-obstructive condition. 14M

UNIT–IV

7. a) Describe the non fixed channel assignment algorithms. 7M
   b) How do you find the values of δ and μ related to the cell? 7M

OR

8. Explain the following in detail concern to the mobile system:
   (a) Setup channel.
   (b) Access channel.
   (c) Paging channel.
   (d) Voice channel. 14M

UNIT–V

9. a) Compare different handoffs? 7M
   b) What is dropped call rate? Explain. 7M

OR

10. a) Elucidate about:
    i. Forced handoffs
    ii. Intersystem handoffs 7M
    b) With neat sketch explain about delaying a handoff. 7M

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R-14

IV B.Tech. II Semester Advanced Supplementary Examinations May/June 2018

Digital Image Processing

(Electronics & Communication Engineering)

Max. Marks: 70 Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 14 = 70 Marks)

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UNIT–I

1. a) Explain about the basic relationships and various distance measures between pixels in digital image.
   b) List the Applications of Image Processing

OR

2. a) Explain about Image Sampling and Quantization Process.
   b) Determine the kernel coefficients of 2D Hadamard transform for N=8.

UNIT–II

3. a) Define histogram of an image. Explain in detail about histogram equalization technique for image enhancement.
   b) What is meant by homomorphic filtering? Explain.

OR

4. a) Explain how image enhancement is done in frequency domain.
   b) Explain the principle of high pass and high boost filtering methods.

UNIT–III

5. a) What are the various noise probability density functions used in image processing applications? Give a brief note on each of them.
   b) What is meant by constrained and unconstrained restoration?

OR

6. a) Define Image restoration. Derive the degradation model for discrete functions
   b) What is meant by inverse filtering? Derive an expression for inverse filtering and what are the draw backs of this method in the presence of noise.

UNIT–IV

7. a) Explain the principle of pseudo color image processing
   b) List the applications of color models.

OR

8. a) Explain about color models.
   b) Write short notes on noise in color images.

UNIT–V

9. a) What are the applications of image segmentation?
   b) Briefly explain error free compression using Huffman coding.

OR

10. a) What is the role of thresholding in segmentation? Explain.
    b) Draw and explain a general compression system model.

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