

Hall Ticket Number :

**R-17**

**Code: 7G384**

IV B.Tech. II Semester Supplementary Examinations November 2022

**Wireless Communications & Networks**  
( Electronics and Communication Engineering )

Max. Marks: 70

Time: 3 Hours

Answer any five full questions by choosing one question from each unit ( 5x14 = 70 Marks )

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		Marks	CO	Blooms Level
<b>UNIT-I</b>				
1. a)	Derive the expression for Efficiency of TDMA system	7M	1	III
b)	Consider Global System for Mobile which is a TDMA/FDD system that uses 25 MHZ for the forward link, which is broken into radio channels of 200khz. If 16 speech channels are supported on a single radio channel and if no guard band is assumed. Find the number of simultaneous users that can be accommodated in GSM.	7M	1	II
<b>OR</b>				
2. a)	Explain different Wireless Communication Systems	7M	2	II
b)	Explain Spread Spectrum Multiple Access	7M	1	II
<b>UNIT-II</b>				
3. a)	Distinguish between wireless and fixed telephone networks,	7M	2	III
b)	Explain Signaling System No7 architecture with neat diagram	7M	1	V
<b>OR</b>				
4. a)	Explain Traffic routing in wireless networks.	7M	2	III
b)	Discuss briefly about BISDN and ATM.	7M	1	V
<b>UNIT-III</b>				
5. a)	Explain Operation of mobile IP.	7M	2	IV
b)	Explain WAP Architecture with neat diagram	7M	3	V
<b>OR</b>				
6. a)	Describe tunnelling and encapsulation in mobile IP	7M	2	III
b)	Discuss about WAP session Protocol	7M	3	V
<b>UNIT-IV</b>				
7. a)	Explain about the IEEE802.11 protocol architecture and services	7M	1	V
b)	Describe Infra-red LANs	7M	2	I
<b>OR</b>				
8. a)	Explain the functions of Logical link control and adaptation protocol in Bluetooth	7M	2	V
b)	Explain Blue tooth Baseband and Link Manager Specification	7M	3	I
<b>UNIT-V</b>				
9. a)	Explain Short messaging service in GSM,	7M	4	I
b)	Explain Protocol architecture of GPRS	7M	3	V
<b>OR</b>				
10. a)	Distinguish HIPERLAN-1 and 802.11 WLAN.	7M	2	V
b)	Draw and explain the architecture and layers of HIPERLAN.	7M	2	V

\*\*\*END\*\*\*

**Code: 7G387**

IV B.Tech. II Semester Supplementary Examinations November 2022

**Digital Image Processing**

(Electronics and Communication Engineering)

Max. Marks: 70

Time: 3 Hours

Answer any five full questions by choosing one question from each unit (5x14 = 70 Marks)

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**UNIT-I**

- |       |   | Marks | CO | BL |
|-------|---|-------|----|----|
| 1. a) | Discuss the image acquisition using single sensor and sensor strips.                    | 7M    | 1  | 2  |
| b)    | Explain the fundamental steps used in Digital image processing with neat block diagram. | 7M    | 1  | 2  |

**OR**

- |       |  |    |   |   |
|-------|--|----|---|---|
| 2. a) | Illustrate the following mathematical tools used in digital image processing<br>(i) Arrays and Matrix operations    ii) Linear versus nonlinear operations | 7M | 1 | 3 |
| b)    | Explain Hadamard transform and write its properties.   | 7M | 1 | 1 |

**UNIT-II**

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|-------|--|----|-----|---|
| 3. a) | Explain about the following point processing operations in spatial domain.<br>(i) Image negative (ii) Log transformation iii) Power law Transformation | 7M | 2&5 | 2 |
| b)    | Explain in detail about spatial filtering for image enhancement.   | 7M | 2&5 | 2 |

**OR**

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|-------|--|----|-----|---|
| 4. a) | Illustrate image smoothing and sharpening filters in frequency domain enhancement. | 7M | 2&5 | 3 |
| b)    | Explain histogram equalization in detail.  | 7M | 2&5 | 2 |

**UNIT-III**

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|-------|---|----|-----|---|
| 5. a) | What are the important noise probability density functions? Describe any four.      | 7M | 3&5 | 2 |
| b)    | Discuss about image restoration process when the images are degraded by noise only. | 7M | 3&5 | 2 |

**OR**

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|-------|---|----|-----|---|
| 6. a) | Explain inverse filter. What is the draw back in inverse filter?          | 7M | 3&5 | 1 |
| b)    | Explain minimum mean square error (Wiener) filtering in image processing. | 7M | 3&5 | 2 |

**UNIT-IV**

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|-------|---|----|-----|---|
| 7. a) | Discuss about RGB color model.          | 7M | 4&5 | 2 |
| b)    | Describe Pseudo color image processing. | 7M | 4&5 | 1 |

**OR**

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|-------|--|----|-----|---|
| 8. a) | Differentiate the different color models and give the conversions from one model to other model. | 7M | 4&5 | 4 |
| b)    | Explain about full color image processing  | 7M | 4&5 | 2 |

**UNIT-V**

- |       |   |    |     |   |
|-------|---|----|-----|---|
| 9. a) | Explain detection of discontinuities briefly.     | 7M | 2&5 | 2 |
| b)    | Explain any one region based segmentation method. | 7M | 2&5 | 2 |

**OR**

- |        |   |    |     |   |
|--------|---|----|-----|---|
| 10. a) | What is redundancy? Explain any two redundancies. | 7M | 3&5 | 1 |
| b)     | Explain Lossless predictive coding method.        | 7M | 3&5 | 2 |

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