

No. of Printed Pages : 03

Roll No. ....

**BB-63**

**M. Tech. EXAMINATION, May 2018**

(Second Semester)

(B. Scheme) (Main & Re-appear)

(ECE/Industry Integrated)

MTEC506B

DIGITAL IMAGE PROCESSING

*Time : 3 Hours]*

*[Maximum Marks : 75*

---

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

---

**Note :** Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

(3-15/13)M-BB-63

**P.T.O.**

### **Unit I**

1. What is Digital Image Processing ? Briefly explain the fundamental steps used in Digital Image Processing. **15**
2. What is the use of applying a Laplacian mask and an averaging mask to an image ? In which order these operations should be applied ? **15**

### **Unit II**

3. A continuous Gaussian low pass filter in the continuous frequency domain has the transfer function =  $A$ . Show that the corresponding filter in the spatial domain is  $h = A$ . **15**
4. Briefly explain DFT algorithm for computation of IDFT. **15**

### **Unit III**

5. What is Filtering ? Differentiate between Inverse and Minimum Mean Square Error Filtering. **15**

6. What is Image Degradation ? With the help of suitable sketch briefly explain Image Degradation/Restoration Model. **15**

### **Unit IV**

7. (a) What is Thresholding ? Differentiate between multiple and multivariable thresholding techniques. **7**  
(b) Differentiate between Lossy and Lossless Compression Techniques. **8**
8. Write the following :  
(a) Region Based segmentation algorithm **8**  
(b) Run Length Coding. **7**