

# GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-VIII (NEW) EXAMINATION – WINTER 2020

**Subject Code:2181102**

**Date:19/01/2021**

**Subject Name:Fundamental of Image Processing**

**Time:02:00 PM TO 04:00 PM**

**Total Marks: 56**

**Instructions:**

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		MARKS
<b>Q.1</b>	(a) What do you mean by erosion?	<b>03</b>
	(b) Differentiate between Rods and Cones.	<b>04</b>
	(c) Explain the working of spatial domain low pass and median filter.	<b>07</b>
<b>Q.2</b>	(a) What are the advantages of DCT over DFT?	<b>03</b>
	(b) Explain the steps for frequency domain filtering.	<b>04</b>
	(c) How the JPEG compression technique works?	<b>07</b>
<b>Q.3</b>	(a) What do you mean by ringing effect?	<b>03</b>
	(b) Explain the power law transformation for an image enhancement.	<b>04</b>
	(c) Compare, inverse and pseudo inverse filtering	<b>07</b>
<b>Q.4</b>	(a) What do you mean by the zero padding, How it can be used?	<b>03</b>
	(b) Compare, Butterworth and Gaussian low pass filter	<b>04</b>
	(c) Describe the working of High pass, High boost and High emphasis filtering.	<b>07</b>
<b>Q.5</b>	(a) What do you mean by thresholding?	<b>03</b>
	(b) Explain about the different type of redundancy.	<b>04</b>
	(c) Explain in detail the split and merge segmentation technique.	<b>07</b>
<b>Q.6</b>	(a) What do you mean by the dilation?	<b>03</b>
	(b) Explain about HSI color Model.	<b>04</b>
	(c) Explain in detail the working of canny edge detection algorithm.	<b>07</b>
<b>Q.7</b>	(a) Explain the basic block diagram of an image processing system.	<b>03</b>
	(b) Explain about log transformation for an Image enhancement.	<b>04</b>
	(c) Explain in detail the Image restoration by using winner filtering.	<b>07</b>
<b>Q.8</b>	(a) What do you mean by the Image Negative?	<b>03</b>
	(b) Compare, opening and closing operation.	<b>04</b>
	(c) Explain in detail the Image compression by using wavelet transform.	<b>07</b>

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