

	<p style="text-align: center;"><b>ADAMAS UNIVERSITY</b>  <b>END-SEMESTER EXAMINATION : MAY 2021</b>          (Academic Session: 2020 – 21)</p>		
<b>Name of the Program:</b> (Example: B. Sc./BBA/MA/B.Tech.)	B. Tech ECE	<b>Semester:</b> (I/III/ V/ VII/IX)	VIII
<b>Paper Title :</b>	ELECTIVE-VII (IMAGE AND VIDEO PROCESSING)	<b>Paper Code:</b>	EEC61107
<b>Maximum Marks :</b>	40	<b>Time duration:</b>	3 Hours
<b>Total No of questions:</b>	8	<b>Total No of Pages:</b>	2
(Any other information for the student may be mentioned here)			

***Answer all the Groups***

**Group A**

Answer all the questions of the following

$5 \times 1 = 5$

**1.**

- (i) What is Rod cells?
- (ii) Define Saturation in HSI color model? Write the value of S.
- (iii) What is Ringing effect? When it appear.
- (iv) In Image processing, what is the function of sobel operator?
- (v) Yellow is the intermediate color of – Blue and Green, Red and Green, or Blue and Red.

**Group B**

*(Answer any three questions)*

**$3 \times 5 = 15$**

**2.**

- a) Explain HIS color Model? [3+2=5]
- b) Write the short note on color image smoothing.

**3.**

- a) What is image histogram? [2+3=5]
- b) Write the differences between image smoothing and image sharpening.

**4.**

- a) What is image enhancement? [2+3=5]
- b) Write-down the steps of frequency domain filtering with block diagram

**5.**

- a) What is image restoration? [2+3=5]
- b) Write Gaussian and exponential noise model with diagram

### **Group C**

*(Answer any two questions)*

$$2 \times 10 = 20$$

- 6.
- a) What is saturation in HSI model? [1+4+5=10]
  - b) The values of a given pixel in RGB color model R=150, G= 210 and B=100. Calculate the values of H, S and I for HSI model representation.
  - c) Write the short note on homomorphic filtering.
- 7.
- a) What is bit plane representation? [2+3+5=10]
  - b) Explain image negative and log transform with transform function
  - c) Write the short note on adaptive Median filter
- 8.
- a) Describe arithmetic and geometric mean filter [2+2+4+4=10]
  - b) What is ringing effect?
  - c) Explain Butterworth and Gaussian low pass filter in frequency domain.
  - d) Write the short note on Notch filter