



**KONERU LAKSHMAIAH
EDUCATION FOUNDATION**
(Deemed to be University, Estd. u/s. 3 of UGC Act 1956)

B.Tech - Even Sem : End Semester Exam
Academic Year:2021-2022

19CS3271R - Perception and Computer Vision
Set No: 3

Time:		Max.Marks: 100					
S.NO	Answer All Questions	Choice	Options	Marks	CO	CO BTL	COI BTL
1.	Explain in details the RGB color space by drawing a relevant diagram, showing how combinations of the three axes can form different colors such as white, yellow and other spectral colors.	choice Q-2		10Marks	CO1	1	1
2.	State with the help of a diagram, what a digital image is in general and in particular what a grayscale image is, also mentioning what is meant by resolution.			10Marks	CO1	1	1
3.	Recall and describe the principle of univariance by drawing the spectral responses of the S, M and L cones in the human visual system.	choice Q-4		15Marks	CO1	1	2
4.	Describe with the help of a detailed labeled diagram, the HSV color space explaining how the hue and saturation are controlled.			15Marks	CO1	1	2
5.	Discuss what is meant by a filterbank? Discuss and explain a Gabor filterbank in this context.	choice Q-6		10Marks	CO2	2	1
6.	Illustrate and discuss the construction of the Gaussian and Laplacian pyramids.			10Marks	CO2	2	1
7.	Identify and explain five different applications of Gabor filters.	choice Q-8		15Marks	CO2	2	2
8.	Summarize and discuss how bar and spot filters are constructed by using oriented and concentric Gaussians by drawing a suitable diagram.			15Marks	CO2	2	2
9.	Illustrate and explain agglomerative clustering.	choice Q-10		10Marks	CO3	3	1
10.	Formulate the algorithm for divisive clustering.			10Marks	CO3	3	1
11.	Demonstrate the concept of gestalt as applied to image segmentation by clustering, supplementing your explanation with relevant diagrams and/or equations.	choice Q-12		15Marks	CO3	3	3
12.	Construct a Laplacian pyramid from a Gaussian pyramid and explain the REDUCE and EXPAND operations with a detailed labeled diagram.			15Marks	CO3	3	3
13.	Compose and explain the practical problems of the hough transform.	choice Q-14		10Marks	CO4	4	1
14.	List and describe pose consistency methods. Draw diagrams wherever necessary to better illustrate your explanation.			10Marks	CO4	4	1
15.	Demonstrate and list the practical difficulties encountered with regard to the Hough Transform related to quantization errors.	choice Q-16		15Marks	CO4	4	2
16.	Summarize pose consistency for affine camera models by drawing a suitable diagram to better explain your explanation.			15Marks	CO4	4	2

[object HTMLDivElement]

265