



*R20 Regulation* *Subject code:3P4GB*  
**TKR COLLEGE OF ENGINEERING AND TECHNOLOGY**  
(Autonomous, Accredited by NAAC with 'A+' Grade)

**B.Tech IV Semester Supplementary Examinations, December 2024**

**INTRODUCTION TO COMPUTER VISION  
(CSE (AI &ML))**

**Maximum Marks: 70**

Date:05.12.2024

Duration: 3 hours

- Note: 1.This question paper contains two parts A and B.  
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.  
3. Part B consists of 5.Units. Answer any one full question from each unit which carries 10M.  
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

**Part-A**

All the following questions carry equal marks (10X2M=20) Marks		CO	Bloom Tx
1	What is computer vision?	1	L1
2	Define image.	1	L1
3	What is noise?	2	L1
4	Write about segmentation?	2	L1
5	What is erosion?	3	L1
6	What is image acquisition?	3	L1
7	What is Dilation?	4	L1
8	Write about low pass and High pass filters?	4	L1
9	What is region and edge?	5	L1
10	What is morphing and warping?	5	L1

**Part-B**

Answer All the following questions. (5X10M=50Marks)		CO	Bloom Tx
11	How the convolution results are stored and write about the different window operations? [10M]	1	L2
OR			
12	Explain 2D Geometry operations with examples? [10M]	1	L2
13	What is histogram and how the histogram equalization process works? Explain with an example? [10M]	2	L2
OR			
14	Implement crack edge detection on an image and compare the results after a different number of iterations. Does equalization of original image affect the result? [10M]	2	L2
15	Explain thresholding errors, color thresholding? How histogram equalization works? [10M]	3	L2
OR			
16	a)How the human visual system works and also write about color perception of human eye? [5M]	3	L2

	b) Briefly write about the following a) Colour Imaging b) Range imaging and real time capturing? [5M]		
17	Compare the compression of the following image using [10M] a) Huffman coding b) Contour coding c) Run length coding d) LSW coding 1 1 1 1 5 5 5 5 2 2 2 2 1 1 1 5 5 5 5 5 2 2 3 1 1 5 5 5 5 2 2 3 3 2 1 1 1 1 5 5 5 2 2 2 2 2 1 1 1 1 1 1 5 2 2 2 3 2 1 1 1 1 1 1 1 1 1 1 1 1 Note: The image has a grey-level range of 0-7	4	L2
	OR		
18	Explain in detail about RGB and HSV models? Explain how the scanners work? [10M]	4	L2
19	Implement the Bayesian likelihood operation on some figures of your own? [10M]	5	L2
	OR		
20	What are different approaches to the decision making process in pattern recognition and also explain in detail about Decision functions? [10M]	5	L2