BACHELOR OF TECHNOLOGY (CBCS) (2021-COURSE)
B. Tech. Sem - VII Computer Science & Engineering AI & ML : WINTER: 2025
SUBJECT: COMPUTER VISION

Day : Thursday
Date : 11/12/2025

W-23986-2025

Time : 02:30 PM-05:30 PM
Max. Marks : 60

N.B.:

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Draw neat diagrams **WHEREVER** necessary.
4) Assume suitable data, if necessary.

Q. 1 What are the different types of image? Discuss various types of noise in image. **(10)**

OR

Q. 1 Consider the image below and calculate output of pixel (2,2) if smoothing is done using 3×3 neighborhood using filters below **(10)**
i) Box ii) Weighted average filter iii) Median iv) Min v) Max

7	9	5
4	6	8
2	0	1

Q.2 Explain the concept of connectedness and describe following concepts **(10)**
i) Connectivity Analysis ii) Connectivity Criteria
iii) Connectedness in object recognition iv) Connectivity – Based operation

OR

Q. 2 What is binary shape analysis? What are the different key aspects for binary shape analysis? **(10)**

Q. 3 Explain Generalized Hough transform in detail. **(10)**

OR

Q. 3 Using Hough Transform show that following points are collinear and find the equation of line (1,1), (2,2) and (3,3). **(10)**

Q. 4 What are passive techniques for 3D vision? **(10)**

OR

Q. 4 Explain the concept of 3D recognition and reconstruction. **(10)**

Q. 5 What is bundle adjustment in computer vision? **(10)**

OR

Q. 5 Write a short note on: **(10)**
i) Optical flow ii) Spline based motion

Q. 6 How you can use computer vision for In – Vehicle vision system explain with the case study. **(10)**

OR

Q. 6 Discuss face detection in image processing with case study. **(10)**

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