

Instructions :

- 1. This is a team assignment. Maximum size of the team will be three only. Whether your team size is ONE OR TWO OR THREE – ALL THREE PARTS NEED TO BE COMPLETED BY TEAM. FAILURE TO COMPLETE WILL RESULT IN LOSS OF MARKS OF SECTIONS NOT SUBMITTED. NO NEGOTIATIONS PERMITTED.**
- 2. DO not lend your assignment for copying. Excessive similarity between any two assignments will result in all the teams getting penalized. Please also note this validation will be done possibly after CAT-1 and handwriting similarity will be checked in case of doubt. THE CONCERNED TEAM MAY BE ASKED TO SUBMIT HARD-COPY IN DOUBT.**
- 3. THE ASSIGNMENT SHOULD HAVE A SEPARATE TITLE PAGE WHICH SHOULD MENTION TEAM LEAD AND TEAM MEMBERS NAME AND REGISTER NUMBERS. FAILURE TO MENTION TEAM MEMBERS NAME will result in that decision that team member will NOT be part of the team. NO one can be added later by in person meeting/phone msg/ text msg /whatsapp msg or by any other means.**
- 4. ONLY ONE SUBMISSION PER TEAM BY TEAM LEADER ONLY. Team members may check other's part before submission – All team members will GET SAME MARK and all of them are EQUALLY RESPONSIBLE FOR CORRECTNESS, NEATNESS AND SUBMISSION IN TIME. Blaming any person NOT PERMITTED.**
- 5. LAST DATE OF SUBMISSION IS 9th Feb 2025 23:59 hours – Late submissions will result in serious penalty.**

PART-A:

Study the following topics on your own. You can refer any material in any book, pdf or web. You have to adequately explain the theory as well as write Matlab or OpenCV program and give the code as well as the output. You need to use your hostel room or living room as the input. [3 marks- Suggested size = Maximum three pages for each topic – total 12 pages] – HANDWRITTEN, PHOTOGRAPHED and CONVERTED TO PDF] – Typed materials submitted in violation of this guideline will get ZERO.

- [a] Harris Corner detector
- [b] Marr-Hildreth edge detector
- [c] Canny edge detector
- [d] Image pyramids and their applications

PART-B

Solve All of the following problems in material given in lms [5 marks]

- [a] problems 2.5, 2.6, 2.8, 2.9, 2.10, 2.14, 2.18, 2.32, 2.36, 2.37

[b] problems 3.4[b],3.11,3.12,3.18,3.21,3.26,3.27,3.28,3.29,3.30

[ALL ANSWERS TO BE HANDWRITTEN,PHOTOGRAPHED and CONVERTED TO PDF]

PART-C –This could be substituted by your Project review1 if you are doing a DIP project. But that project do some significant DIP. NOT Simply reading from image file and writing image output].

3. Write programs in MATLAB or OpenCV to implement [2 marks]

[a] arithmetic operations on images [addition, subtraction, multiplication and division]

[b] Set operations on images [union, intersection, negation, XOR]

[c] transformation operations [Translation, Rotation and shear]

[d] Histogram equalization

[ALL OF THESE ARE TYPEWRITTEN – PROGRAM and OUTPUT].

For those submitting review 1 doc – the typewritten doc should contain

[a]Name of the project

[b] Background and Social relevance of that project

[c] Existing solutions and their deficiency which you will be addressing

[d]Hardware/Software you will be using

The doc should contain team members names and their register numbers and should be in PDF format.