

Roll Number: \_\_\_\_\_

**Thapar Institute of Engineering and Technology, Patiala**

Department of Computer Science Engineering

**MID SEMESTER EXAMINATION**

B. E. (Third Year): Semester-V	Course Code: UCS547
	Course Name: Edge AI &Robotics:Accelerated AI
October 1, 2022	Saturday, 13.00 – 15.00 Hrs
Time: 2 Hours, Max. Marks: 25	Name Of Faculty: JHB

*Attempt 5 out of 5 questions, assume any missing data.*

1.	I want to create a CNN model to identify cars in dark environment. Although I did collect some night images, I could not collect images that are very dark in nature. How can I annotate my dataset so that I will be able to get a robust model. Write a code to support your answer.	5
2.	With the help of diagrams and algorithm can you elaborate how to compute SIFT features.	5
3.	I have clicked a picture of the whiteboard in class from a corner and the image looks blurry as well as slanted. Can you help me with the code to make it sharp as well as straight.	5
4.	You have to generate a 2D matrix such that value at every position is given by $2*(i+j)$ where $i$ is row number and $j$ is column number. With the help of a cpp code snippet explain how you can implement 2D grids with stride. Take the matrix to be of size $N*N$ and start index of both $i$ and $j$ as 0.	5
5.	With the help of python code snippets explain how to resolve a)shared memory conflicts b)race conditions	2.5*2