

| | | | |
|------------------------|------------------------------------|-----------------|-----------------|
| Sub Code/Name | 18CSE390T – Computer Vision | Set | EVEN |
| Year/Sem/Branch | III/ V/ B.Tech-CSE-AIML | Date | |
| Max. Marks | 50 | Duration | 90 Mins. |

PART A (20 X 1= 20)
ANSWER ALL THE QUESTIONS

| Q.No. | MCQ Questions | Marks | CO | BL | PI |
|--------------|---|--------------|-----------|-----------|-----------|
| 1. | For edge detection we observe a) intensity transition b) shape transition c) color transition d) sign transition | 1 | 2 | 1 | 1.6.1 |
| 2 | The direction of angle to the gradient is a) Orthogonal b) Isolated c) Isomorphic d) Isotropic | 1 | 2 | 1 | 1.6.1 |
| 3 | Edge detection in images is commonly accomplished by performing a spatial --- of the image field. a) Smoothing Filter b) Integration c) Differentiation d) Min Filter | 1 | 2 | 2 | 1.6.1 |
| 4 | Multi-dimensional hashing maps descriptors into _____ based on some function applied to each descriptor vector. a) fixed size buckets b) variable sized buckets c) table d) Dbms | 1 | 2 | 2 | 1.6.1 |
| 5 | Isolated edge points can also be grouped into _____ a) Pixel b) region c) Longer curves or contours, as well as straight line segments d) Contour | 1 | 2 | 1 | 1.6.1 |
| 6 | Techniques like Livewire or Intelligent Scissors are used in a. Model based segmentation b. Semi automatic segmentation c. Threshold segmentation d. Segmentation | 1 | 3 | 1 | 1.6.1 |

| | | | | | |
|----|--|---|---|---|-------|
| 7 | Example of Active Contour a.Snakes, intelligent scissors, level set b. Sucessive Approximation c. Hough Transform d.Scissors | 1 | 3 | 1 | 1.6.1 |
| 8 | An Approach which optimize the contour in real time as the user is drawing a) Intelligent Scissors System b) Gaussian c) Similarity d) Edge | 1 | 3 | 1 | 1.6.1 |
| 9 | In level set which define the curve a. Contrast b. Quantization c. Sampling d. Zero crossing of a characteristic function | 1 | 3 | 1 | 1.6.1 |
| 10 | Split and merge technique is a. Image Restoration Technique b. an Image Processing Technique Used To Segment An Image c. Image Enhancement Technique d. Image Acquisition Technique | 1 | 3 | 1 | 1.6.1 |

PART B (4 X 4 = 16)
ANSWER ANY 4 QUESTIONS

| Q. No. | Questions | Marks | CO | BL | PI |
|--------|---|-------|----|----|-------|
| 11 | Discuss about Bias and Gain normalization | 4 | 2 | 1 | 2.5.1 |
| 12 | Explain briefly about vanishing points | 4 | 2 | 2 | 2.5.2 |
| 13 | Write short notes on Edge Linking | 4 | 2 | 2 | 2.5.4 |
| 14 | Discuss in detail about Snakes | 4 | 3 | 2 | 2.5.1 |
| 15 | Difference between divisive and agglomerative algorithms in cluster analysis. | 4 | 3 | 2 | 2.6.4 |
| 16 | Write short note on Pose estimation. | 4 | 3 | 2 | 2.6.2 |

PART C (2 X 12 = 24)
ANSWER ALL THE QUESTIONS

| Q. No. | Questions | Marks | CO | BL | PI |
|--------|---|-------|----|----|-------|
| 17 | a) Explain in detail about feature detection techniques with relevant examples and diagrams. | 12 | 2 | 3 | 2.6.4 |
| | OR | | | | |
| | b) What are feature descriptors? Explain the following feature descriptors: ii) SIFT iii)GLOH. | 12 | 2 | 2 | 2.7.1 |
| 18 | a)List the approaches used to locate boundary curves in images. Explain Intelligent Scissors and level set in detail. | 12 | 3 | 1 | 2.7.1 |
| | OR | | | | |
| | b) Illustrate the expectation maximization algorithm in K-means and mixture of Gaussians.. | 12 | 3 | 3 | 2.7.1 |

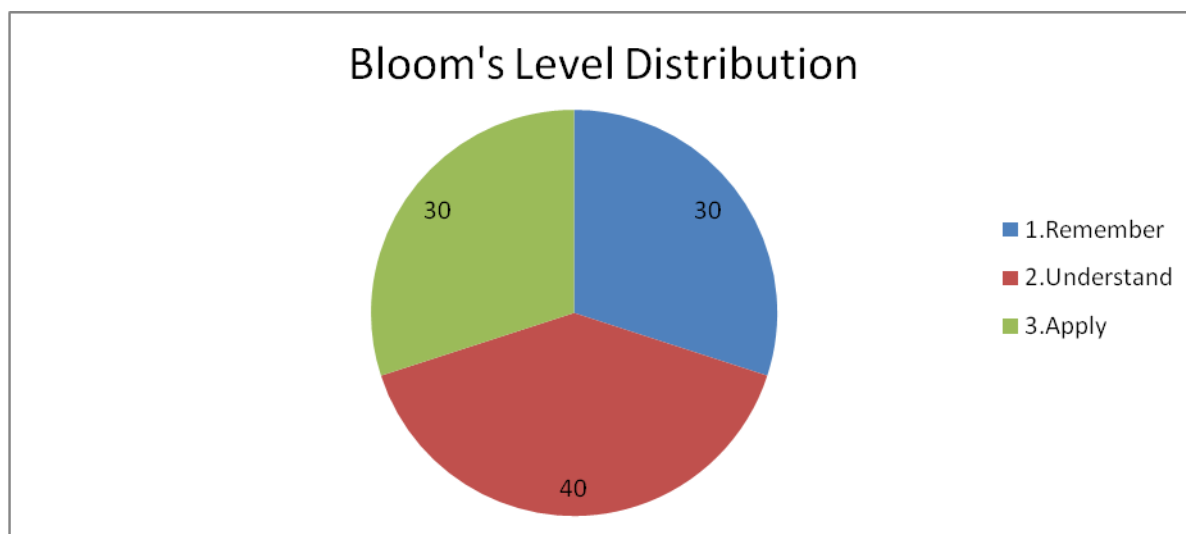
Outcome Alignment Matrix:

| QUESTION NUMBER | CO distribution | | | | |
|--------------------|-----------------|------------|------------|-----|-----|
| | CO1 | CO2 | CO3 | CO4 | CO5 |
| 1. | | 1 | | | |
| 2. | | 1 | | | |
| 3. | | 1 | | | |
| 4. | | 1 | | | |
| 5. | | 1 | | | |
| 6. | | | 1 | | |
| 7. | | | 1 | | |
| 8. | | | 1 | | |
| 9. | | | 1 | | |
| 10. | | | 1 | | |
| 11. | | 4 | | | |
| 12. | | 4 | | | |
| 13. | | 4 | | | |
| 14. | | | 4 | | |
| 15. | | | 4 | | |
| 16. | | | 4 | | |
| 17 a | | 12 | | | |
| 17 b | | 12 | | | |
| 18 a | | | 12 | | |
| 18b | | | 12 | | |
| Total | | 41 | 41 | | |
| % | | 50% | 50% | | |

Quality Matrix:

| Question No. | BL Distribution | | |
|-----------------|-----------------|------------|------------|
| | L1 | L2 | L3 |
| 1 | 1 | | |
| 2 | 1 | | |
| 3 | | 1 | |
| 4 | | 1 | |
| 5 | 1 | | |
| 6 | 1 | | |
| 7 | 1 | | |
| 8 | 1 | | |
| 9 | 1 | | |
| 10 | 1 | | |
| 11 | 4 | | |
| 12 | | 4 | |
| 13 | | 4 | |
| 14 | | 4 | |
| 15 | | 4 | |
| 16 | | 4 | |
| 17a | | | 12 |
| 17b | | 12 | |
| 18a | 12 | | |
| 18b | | | 12 |
| Total | 24 | 34 | 24 |
| % | 30% | 40% | 30% |

Bloom's level Distribution:



Prepared by:

Course Coordinator

Scrutinised by:

Verified & Approved by HOD