

END SEMESTER EXAMINATION – MARCH 2025**SEMESTER 8: INTEGRATED M. Sc. PROGRAMME IN COMPUTER SCIENCE – DATA SCIENCE****COURSE : 21UP8CRMCP28: IMAGE AND VIDEO ANALYTICS***(For Regular 2021 Admission)*

Time: Three Hours

Max. Weightage: 30

PART A**Answer any 8**

1. List any five applications of Augmented Reality. (R)
2. Differentiate between grayscale and color images. (U)
3. Define thresholding and edge-detection in image segmentation. (An)
4. Briefly explain video summarization and state why is it useful? (An)
5. Define real-time video analytics with an example. (U)
6. Explain change detection in video analytics. (An)
7. Explain the role of clustering in image segmentation. (A)
8. Discuss the motion field and optical flow of the Barber-pole illusion. (An)
9. Define the term path in image processing. (R)
10. Define video analytics and mention its key applications. (U)

(1 x 8 = 8 Weight)**PART B****Answer any 6**

11. Explain the concept of adjacency between pixels in image processing. (U)
12. Explain all the types of image segmentation. (U)
13. Explain content-based video analysis (CBVA) and its applications. (An)
14. Explain distance measures like Euclidean distance and D8 distance with example. (A)
15. List down and explain different motion models that aid in object tracking. (An)
16. Explain the concept of video mining. (An)
17. Differentiate between Video Object Segmentation and Video Semantic Segmentation. (An)
18. Describe the role of Video Analytics in Healthcare applications. (A)

(2 x 6 = 12 Weight)

PART C

Answer any 2 (5 weights each)

19. Describe the mathematical formulation of the Lucas-Kanade Method.
Discuss its advantages and limitations. (An)
 20. Discuss the concept of image segmentation and its key concepts. (An)
 21. Explain in detail the structure of the human eye and the process of image formation in the retina. (An)
 22. Describe few applications of video analytics in different fields. (A)
- (5 x 2 = 10 Weight)**