

QP CODE: 26801765



Reg No :

Name :

INTEGRATED M.Sc. DEGREE EXAMINATION, APRIL 2026

Eight Semester

INTEGRATED M.Sc. COMPUTER SCIENCE-DATA SCIENCE

ELECTIVE - ICSD8EC1 - IMAGE AND VIDEO ANALYTICS

2021 Admission Onwards

08CB3895

Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

Weight 1 each.

1. Define the term image processing.
2. Differentiate Discrete Fourier Transform and Discrete Cosine Transform.
3. Explain what is texture in image and video.
4. Explain image compression.
5. Explain SLAM in segmentation using moving camera.
6. Explain video tracking.
7. What are the major challenges faced in implementing real-time video analytics in large-scale surveillance systems?
8. How are visual features like color, texture, and shape used in content-based video retrieval (CBVR)?
9. What role does Convolutional Neural Networks (CNNs) play in video analytics? Give one practical application.
10. How does real-time video analytics enhance user interaction in AR/VR environments?

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

Weight 2 each.

11. Explain the advantages of image quantization.
12. Explain applications of image and video enhancement.
13. Explain two types of image pyramids.





14. Differentiate global motion and local motion.
15. Give the types of optical flow.
16. Discuss the challenges involved in real-time behaviour recognition in video surveillance systems. How can these challenges be mitigated?
17. Explain the process of human motion recognition using video analytics. What are the key stages involved, from video input to activity classification?
18. Describe one way video analytics is used in marketing campaign analysis.

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

Weight 5 each.

19. Describe the approaches to object detection and recognition.
20. Explain the approaches in change detection to eliminate the problem of image segmentation.
21. Temporal and spatial event recognition are key components of video analytics that help in understanding what is happening in a video, where and when?
22. Discuss the use of video analytics for patient monitoring in healthcare. How can motion and posture analysis help in fall detection and activity recognition?

(2×5=10 weightage)

