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Question Paper Code:U6E01

B.E./B.Tech. DEGREE EXAMINATION, NOV 2024

Sixth Semester

Artificial Intelligence And Data Science

21UAD601-INTELLIGENCE COMPUTER VISION

(Regulations2021)

Duration: Three hours

Maximum: 100 Marks

PART A - (10 x 2 = 20 Marks)

1. Classify image sensing sensors. CO1-U
2. Difference between brightness and Contrast. CO1-U
3. Discuss the application of Fourier transform in image processing. CO1-U
4. Explain how smoothing helps in reducing noise in images CO1-U
5. Name few boundary descriptors CO1-U
6. Consider a one-dimensional image $f(x) = [10 \ 10 \ 10 \ 10 \ 40 \ 40 \ 40 \ 40 \ 20 \ 20]$ CO2-App
What is the first and second derivative? Locate the position of edge.
7. Define interpixel redundancy? CO1-U
8. Explain about Lossy compression? CO1-U
9. Explain Different components of an object recognition system CO1-U
10. What is feature extraction in the context of image recognition? CO1-U

PART – B (5 x 16= 80 Marks)

11. (a) Explain the two dimensional Pinhole imaging model in brief CO1-U (16)
Or
(b) Explain the working principle of Digital Camera. CO1-U (16)
12. (a) Explain the Homomorphism filtering. CO1-U (16)
Or
(b) Explain the inverse filtering with suitable example. CO1-U (16)

13. (a) How is line detected? Explain through the operators CO1-U (16)
Or
(b) Explain Back propagation neural networks in detail CO1-U (16)
14. (a) Explain about Image compression model? CO1-U (16)
Or
(b) Explain three categories of constant area coding in detail? CO1-U (16)
15. (a) Define object recognition in computer vision. CO1-U (16)
Or
(b) Briefly introduce the role of machine learning and deep learning in advancing object recognition techniques. CO1-U (16)