

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- December-2018

PhD I Semester

COURSE CODE: 16M1WEC231

MAX. MARKS:35

COURSE NAME: ADVANCE DIGITAL IMAGE PROCESSING

COURSE CREDITS: 3

MAX. TIME: Two Hours

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

1. Differentiate between MRI, X-ray and CT medical imaging modalities on the basis of the imaging phenomenon involve. Also state their advantages and limitations.

[5] CO2

2. (a) What do you understand by image segmentation? Explain any one image segmentation method.

[2] CO4

(b) Explain how edge detection techniques can be used for image segmentation.

[3] CO4

3. What do you understand by texture analysis of images? List any three First order statistical texture parameters and give their physical significance.

[5] CO5

4. For the image, I given below, generate normalized GLCM considering ^{North} NE pixel pairs and at a distance of 1 pixel. Also evaluate ASM and contrast from the GLCM obtained.

I =

1	1	1	2	2
1	1	1	2	2
0	0	0	1	1
0	0	0	1	1
0	0	0	1	1

[5] CO5

5. Write a brief note on the following:

(i) Average Filter

(ii) Median Filter

(iii) Histogram

[2+2+1=5] CO2

6. With the help of examples, explain the difference between the supervised and unsupervised learning.

[5] CO6

7. With the help of neat labeled diagram, explain how neural network can be used to classify between the normal and abnormal cases of mouth Ulcers.

[5] CO6

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