

APJ ABDULKALAM TECHNOLOGICAL UNIVERSITY
08 PALAKKAD CLUSTER



Q. P. Code : CESP0820151D-I

(Pages: 2)

Name:

Reg. No:

FIRST SEMESTER M.TECH. DEGREE EXAMINATION MARCH 2021

Branch: Electronics & Communication Engineering

Specialization: Communication Engineering & Signal Processing

08EC6251(D)/08EC6551(D) Digital Image Processing

(Common to CESP and ECE)

Time: 2 hour 15 minutes

Max. Marks: 60

Answer all six questions.

Modules 1 to 6: Part 'a' of each question is compulsory and answer either part 'b' or part 'c' of each question.

Q.no.	Module 1	Marks
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1.a	Why image enhancement is needed in image processing?	3
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Answer b or c

b	Explain the basic relationship between pixels.	6
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c	Explain the basic concepts of sampling and quantization with neat sketch.	6
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Q.no.	Module 2	Marks
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2.a	How image negatives are produced?	3
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Answer b or c

b	Obtain Histogram Equalization of the Image	6
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c	Explain various steps involved in frequency domain filtering.	6
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Q.no. Module 3 Marks

3.a Explain how median filter can be used to eliminate Salt & Pepper noise. **3**

Answer b or c

b Explain the process of homomorphic filtering? **6**

c Discuss in detail, the important noise probability density functions found in image processing applications **6**

Q.no. Module 4 Marks

4.a Define image Compression ratio **3**

Answer b or c

b With block diagram Explain JPEG compression system **6**

c Discuss about RGB and HSI Colour models associated with Image Processing **6**

Q.no. Module 5 Marks

5.a Write about the importance of dilation and erosion operation on a digital binary image. **4**

Answer b or c

b Discuss about morphological smoothing & Morphological gradient **8**

c Explain hole filling and pruning with an example. **8**

Q.no. Module 6 Marks

6.a Define(i) Edge pixels (ii) Edge Detectors **4**

Answer b or c

b Explain Basic Edge detection Methods **8**

c Explain thresholding and Region based segmentation **8**