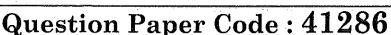
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## B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2018

Sixth/Seventh Semester Information Technology

IT6005 – DIGITAL IMAGE PROCESSING

Common to: Biomedical Engineering/Computer Science and Engineering/ Electronics and Communication Engineering/Electronics and Instrumentation Engineering/Instrumentation and Control Engineering/Mechatronics Engineering/Medical Electronics (Regulations 2013)

Time: Three Hours

Maximum: 100 Marks

Answer ALL questions

PART - A

 $(10\times2=20 \text{ Marks})$ 

- 1. Elucidate on Quantization.
- 2. List color models involved in hardware.
- 3. Necessitate the need for transform.
- 4. Name the different types of derivative filters in DIP.
- 5. How the derivatives are obtained in edge detection during formulation?
- 6. How the discontinuity is detected in an image using segmentation?
- 7. What are two main types of Data compression techniques in DIP?
- 8. What are different compression methods in image coding?
- 9. Define training pattern and training set.
- 10. Enumerate topological feature.

PART - B

 $(5\times13=65 \text{ Marks})$ 

11. a) Describe the fundamental steps in image processing?

(OR)

b) With a neat diagram explain image sensing and acquisition and also explain image acquisition using sensor arrays.



12. a) Enumerate Discrete Fourier Transform in detail.

(OR)

- b) What is histogram equalization? Discuss in detail about the procedure involved in histogram matching.
- 13. a) Explain adaptive filter. What are the two levels of adaptive median filtering algorithms?

(OR)

b) i) What is inverse filtering? Explain.

7

ii) Explain Wiener filtering for image restoration.

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14. a) Explain how compression is achieved in transform coding and explain about DCT.

(OR)

- b) Explain the need for image compression. How Vector quantization approach is used for compression?
- 15. a) Explain chain code in detail with an example.

(OR)

b) Discuss about polygonal approximations with an example.

PART - C

(1×15=15 Marks)

16. a) Justify why histogram processing is called as an efficient tool for graphical representation of the total distribution in a digital image. with the CORD of the contract of the state of the contract of

b) Discuss homomorphic filtering and explain in detail how it is used in correcting non-uniform illumination in images.

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