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SEAT No. : 

P116

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**Oct.-16/BE/Insem.- 174**  
**B.E. (Computer Engineering)**  
**IMAGE PROCESSING (Semester - I)**  
**(2012 Pattern)**

*Time : 1 Hour]**[Max. Marks : 30**Instructions to the candidates:*

- 1) *Neat diagrams must be drawn wherever necessary.*
- 2) *Figures to the right side indicate full marks.*
- 3) *Use of logarithmic tables slide rule, mollier charts, electronic pocket calculator and steam tables is allowed.*
- 4) *Assume suitable data if necessary.*

- Q1)** a) What do you mean by aliasing in the context of image sampling? Explain. **[4]**
- b) If image size is 240kb and the spatial resolution of the image is given  $600 \times 200$ . What is the bit depth? **[2]**
- c) What do you mean by image file format? Mention some of the frequently used image file format. **[4]**

OR

- Q2)** a) Explain image digitization process in detail. **[6]**
- b) Distinguish between a raster and a vector image. **[4]**
- Q3)** a) What is meant by image enhancement? What are the different types of image enhancement techniques? **[4]**
- b) If all the pixels in an image are shuffled, will there be any change in the histogram? Justify your answer. **[4]**
- c) Write transfer function of image negative and show it by graph. **[2]**

**P.T.O.**

OR

**Q4)** a) Justify with example "A median filter is effective in minimizing salt-and-pepper noise in an image". [4]

b) Explain Frequency domain image enhancement techniques. [6]

**Q5)** a) Explain identification of isolated points, lines and edges with respect to image segmentation. [6]

b) Explain boundary based shape descriptor such as chain code. [4]

OR

**Q6)** a) Explain region splitting and merging techniques with example in image segmentation. [4]

b) Explain Feature extraction technique: [6]

i) Fourier Descriptor and

ii) Shape matrix.

