

SUBJECT: DIGITAL IMAGE AND VIDEO PROCESSING

Day: Saturday  
Date: 08/06/2019

Time: 11.00 AM TO 02.00 PM  
Max. Marks: 60

S-2019-3407

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**N.B:**

- 1) All questions are **COMPULSORY**.
  - 2) Figures to the right indicate **FULL** marks.
  - 3) Answer to both the sections should be written in **SAME** Answer book.
  - 4) Use of non-programmable **CALCULATOR** is allowed.
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**SECTION-I**

**Q.1** Explain fundamental steps in digital image processing with diagram. (10)

**OR**

Explain sampling and quantization of an image with example (10)

**Q.2** Explain following intensity transformations: (10)  
i) Image negative    iii) Log transformation  
ii) Bit plane slicing

**OR**

What is histogram equalization? Explain with example (10)

**Q.3** What is image compression? Explain different redundancies. (10)

**OR**

Explain the image compression model. (10)

**SECTION-II**

**Q.4** Explain point and line detection with respect to image segmentation. (10)

**OR**

Explain edge detection algorithm. (10)

**Q.5** Explain following operations with example. (10)  
i) Erosion    ii) Dilation    iii) Closing    iv) Opening

**OR**

Explain arithmetic, geometric harmonic mean filter with example. (10)

**Q.6** Explain following terms: (10)  
i) Analog video    iii) Digital video  
ii) Spatial sampling    iv) Temporal sampling

**OR**

Explain general video coding scheme with block diagram. (10)