

Roll No.

Total No. of Pages :02

Total No. of Questions : 09

B.Tech.(ECE)(2011 Batch E-II)/(ETE) (2011 Onwards E-II) (Sem.-7,8)

SPEECH & IMAGE PROCESSING

Subject Code :BTEC-912

M.Code : 71916

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

SECTION-A**1. Answer briefly :**

- a. Draw the block diagram of speech recognition system.
- b. Explain the auditory masking phenomenon.
- c. Write the expression to find the number of bits to store a digital image.
- d. What is the general relationship between bit-depth and dynamic range?
- e. Define Sampling and Quantization
- f. Explain Periodicity Property in 2DFT.
- g. Describe the Edge Linking, Thresholding and Boundary detection.
- h. What are compression ratio, attack and release time parameters?
- i. What is the general system function of an FIR system?
- j. What is the system function of the second filter other than comb filter in the realization of IIR filter?

SECTION-B

2. Explain different stages of image processing.
3. What are the elements of speech synthesis and speech recognition?
4. Explain KL transformation. Show how the KL transform is useful for reducing the dimensions of an image.
5. Explain what different matching algorithms of speech recognition are.
6. Explain Unitary transform.

SECTION-C

7. Explain DFT and FFT in speech processing.
8. Explain what is the use of IIR and FIR filters in the area of image, speech and medical system.
9. Explain in detail the three different types of redundancies encountered in an image with suitable illustrative examples. Explain image compression standards.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.