Roll No. | | | | | | | | | | | | |

Total No. of Pages : 01

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M.Tech. (ECE) (Sem.–2)

DIGITAL SPEECH & IMAGE PROCESSING

Subject Code : EC-508

M.Code : 36209

Time : 3 Hrs. Max. Marks : 100

INSTRUCTION TO CANDIDATES :

1. **Attempt any FIVE questions out of EIGHT questions.**
2. **Each question carries TWENTY marks.**

Q1 a) Compare the performance of FIR and IIR filters in speech and image processing.

b) Explain the steps used in FIR filter design.

Q2 a) Explain the acoustic theory of speech production with the help of suitable diagram.

b) Name the methods that are used to design the IIR filter. Explain the step invariant method.

Q3 a) Explain harmonics and resonance measurement process in speech processing.

b) Explain in detail the various methods of speech recognition.

Q4 a) Explain slant and cosine transforms in detail.

b) Explain the working of isolated digit recognition system.

Q5 a) Explain the generalize Wiener filter computational technique for image restoration.

b) Explain amplitude segmentation method.

Q6 Write short notes on following :

a) Edge detection

b) Thresholding

c) Geometry description

Q7 Explain Karhunen Loeve compression predictive coding scheme for image compression.

Q8 a) Explain grey scale modification used for image enhancement.

b) Explain constrained deconvolution method.

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.