(DEC 416 B)

B. Tech. DEGREE EXAMINATION, MAY - 2015

(Examination at the end of Final Year)

ELECTRONICS AND COMMUNICATION ENGG.

Paper – VI : Speech Processing

Time : 3 Hours **Maximum Marks : 75**

Answer question No. 1 compulsory ***(15)***

Answer ONE question from each unit ***(4 x 15 = 60)***

1) Write short notes on :

a) Define Discrete time signal.

b) Classifications of speech sounds.

c) What is meant by short time energy?

d) Write the Expression for Autocorrelation.

e) What is meant by STFT?

f) Brief explanation on Homomorphism Systems.

g) What is meant by quantization.

h) Define filter & classify the filters.

i) Speech signal is a ANALOG/DIGITAL. Why?

j) Difference b/w Digital signal & Discrete signal.

Unit - I

2) a) Discuss about categorization of speech sounds.

b) Explain the Discrete time model based on Tube concatenation.

OR

3) a) What is average zero crossing rate. Explain it?

b) Estimate the pitch period using auto correlation.

Unit – II

4) a) Analyse the Sinusoidal Signal from STFT?

b) Analyse the Sinusoidal Signal Frequency domain pitch estimation.

OR

5) a) Explain the operation of Delta modulation.

b) Briefly Explain Instantaneous Quantization.

Unit – III

6) Explain Indetailed about short-time speech Analysis and Synthesis structure.

OR

7) a) Draw & explain the complex spectrum of speech.

b) Explain spectral root homomorphic filtering.

Unit – IV

8) a) Discuss speaker recognition algorithms.

b) What is Distortion measure sub-band coding.

OR

9) a) Explain the speaker Recognition Algorithms.

b) Discuss the features for speaker Recognition.

κβκβ