FACULTY OF ENGINEERING
B.E. IV/IV Year (ECE) II Semester (Main) Examination, May/June, 2011
SPEECH PROCESSING
(Elective – III)

Time : 3 Hours] [Max. Marks : 75

Answer all questions from Part A.
Answer any five questions from part B.

Part A – (Marks : 25)

1. What are the differences between Uniform quantisation and logarithmic
   quantisation? 3
2. Draw the block diagram of basic parallel format synthesiser. 3
3. What is Pulse and RELP Vocoders? 2
4. What are the different problems in automatic speech recognition? 2
5. What is Vector quantization? 3
6. What do you mean by Pitch extraction? 2
7. Define end point detection. 2
8. What are the properties of speech making the automatic speech recognition as
   challenging and difficult? 3
9. Draw the block diagram of differential PCM. 3
10. Define auto correlation function. 2

Part B – (Marks : 50)

11. (a) Explain logarithmic quantisation. 5
    (b) What is uniform quantisation? 5
12. (a) Explain the general discrete time model for speech production with a
    block diagram. 5
    (b) Explain pitch synchronous analysis. 5
13. (a) Explain short term energy function and vector quantisation. 5
    (b) Explain about zero crossing rate and format tracking. 5
14. (a) Draw the block diagram of text to speech conversion using speech
    synthesiser. 5
    (b) Explain linear predictive synthesiser. 5
15. (a) Explain the speech recognition with HMM model. 5
    (b) What is Pitch synchronous analysis? 5
16. (a) Explain how can we find the formats of a phoneme. 5
    (b) Explain channel vocoder. 5
17. Explain all about dynamic time – warping in detail. 10