

**B.Tech Sem – VIII (2007 Course) (Electronics Engg.) :**

**WINTER - 2017**

**SUBJECT : ELECTIVE – II : SPEECH PROCESSING**

Day : **Wednesday**

Time : **02.30 PM TO 05.30 PM**

Date : **22/11/2017**

**W-2017-2678**

Max. Marks : **80**

**N. B. :**

- 1) **Q. No. 1 and Q. No. 5 are COMPULSORY.** Out of remaining attempt **ANY TWO** questions from each section.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer books.
- 4) Draw neat and labelled diagram **WHEREVER** necessary.
- 5) Use of non-programmable calculator is **ALLOWED**.
- 6) Assume suitable data, if necessary.

**SECTION - I**

- Q. 1**
- a) Give a brief note on speech perception. **(05)**
  - b) Describe the pitch estimation in detail. **(05)**
  - c) Compare Quantization and non-uniform Quantization. **(04)**
- Q. 2**
- a) Give the different speech communication applications. **(06)**
  - b) Describe the model of acoustic theory of speech production. **(07)**
- Q. 3**
- a) Describe the short time speech analysis in detail. **(07)**
  - b) What is the basic principle of Linear predictive analysis? **(06)**
- Q. 4**
- a) Discuss different types of speech coding techniques. **(06)**
  - b) Describe the channel vocoder with the help of diagram. **(07)**

**SECTION - II**

- Q. 5**
- a) What is the principle of speech synthesis? **(04)**
  - b) Discuss the evaluation of similarity of speech patterns. **(05)**
  - c) State the different acoustic parameters used in speaker identification. **(05)**
- Q. 6**
- a) Describe the different synthesis methods in detail. **(07)**
  - b) Discuss in brief prosody in synthesis. **(06)**
- Q. 7**
- a) Draw a block schematic for the training mode of speech recognition system and give the function of each block. **(07)**
  - b) State the basic approaches to speech recognition. **(06)**
- Q. 8**
- a) Describe identification verification and the decision threshold in brief. **(06)**
  - b) Describe the text-independent speaker verification with the help of example. **(07)**

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