

**B. Tech. Sem - VIII (Electronics) (2014 COURSE) (CBCS) :
WINTER - 2018**

SUBJECT: ELECTIVE – II SPEECH PROCESSING

Day: Friday
Date: 16/11/2018

W-2018-2641

Time: 02.30 PM TO 05.30 PM
Max Marks.: 60

N.B. :

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Assume suitable data, if necessary.

- Q.1** Describe the following perception:- (10)
- i) Sound perception
 - ii) Speech perception
 - iii) Vowel perception
 - iv) Consonant perception

OR

- Q.1 a)** Discuss the physiological mechanism of speech production with the help of neat diagram. (06)
- b)** Classify and define phonetics. (04)

- Q.2** What is speech analysis? What is the need for short term processing of speech? (10)

OR

- Q.2** Briefly describe the following time domain techniques:- (10)
- i) Short Time Averaging Zero-Crossing Rate (ZCR)
 - ii) Short Time Autocorrelation

- Q.3 a)** A speech signal has a root mean square amplitude of 2V. The signal is to be coded using six bits. The signal density is assumed to be Laplacian. Find the step size. Find quantization noise power. Find the SNR. (06)
- b)** Discuss speech redundancies in brief. (04)

OR

- Q.3** Discuss the sub-band coding of speech with the help of diagram. (10)

- Q.4** Classify and describe the different speech synthesis methods. (10)

OR

- Q.4** Briefly give the history of text-to-speech synthesis and describe the text-to-speech synthesis with a neat block diagram. (10)

- Q.5** Discuss speech enhancement. What problems are reduced using speech enhancements? (10)

OR

- Q.5** Briefly describe the adaptive noise cancellation. (10)

- Q.6 a)** Describe the feature extraction in detail. (06)

- b)** List out different modes of speech recognition. (04)

OR

- Q.6** Describe the n-Gram model of speech recognition. (10)

* * * *