BACHELOR OF TECHNOLOGY (C.B.C.S.) (2014 COURSE)
B.Tech.Sem - VIII ELECTRONIC :SUMMER- 2022
SUBJECT : SPEECH PROCESSING

Day : Wednesday

Date : 22-06-2022   **S-13406-2022**

Time : 02:30 PM-05:30 PM

Max. Marks : 60

N. B. :

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Use of non-programmable calculator is **ALLOWED**.
4) Draw neat and labelled diagrams **WHEREVER** necessary.
5) Assume suitable data, if necessary.

Q. 1   Discuss the speech communication applications.   **(10)**

OR

Describe the human speech production system with the help of a labelled **(10)** diagram.

Q. 2   Describe the LPC analysis and synthesis of speech signal with the help of **(10)** example.

OR

Describe the frequency domain parameters used for speech analysis.   **(10)**

Q. 3   **a)**   Design a three bit quantizer for a source with a Laplacian pdf with a mean of **(06)** zero and variance of four.

     b)   What is speech redundancy? Briefly discuss.   **(04)**

OR

Describe the channel vocoder transmitter and receiver with the help of block **(10)** diagram.

Q. 4   State the principle of speech synthesis.   **(10)**

OR

Draw the block schematic for a text-to-speech synthesis and describe the **(10)** function of each block.

Q. 5   Briefly give the introduction about the speech enhancement with the help of **(10)** block diagram.

OR

Discuss the following speech enhancement techniques: **(10)**

i)   Spectral subtraction and filtering
ii)   Harmonic filtering
iii)   Parametric resynthesis

Q. 6   What is parametric representation of speech signal? What parameters are used **(10)** in speech recognition?

OR

State the different modes of speech recognition. Discuss any one mode in **(10)** detail.

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