First Year BASLP Degree Supplementary Examinations
September 2018

Biomedical Instrumentation and Acoustics

(2012 Scheme)

Time: 3 hrs   **Max marks: 80**
- Answer all questions
- Draw diagram wherever necessary

Essays   **(4x10=40)**

1. Which are the significant characteristics of a dynamic microphone. Explain the significance of each of these characteristics. With supporting diagrams, illustrate how a dynamic microphone converts sound pressure variations in to an equivalent electrical signal
2. Briefly explain the functions performed by a filter. List out the ways in which filters are classified. Draw the frequency response of each of them.
3. Define a digital signal. Explain the different stages involved in conversion of a digital signal to analog signal. How do you decide on the number of samples to be taken while converting a speech signal into digital form.
4. State and explain the tasks performed by the operating system in the functioning of a computer.

Short notes   **(5x5=25)**

5. Magnetic tape recording
6. Artificial larynx
7. IIR and FIR filters
8. Induction loop system
9. Uninterrupted power supply

Answer briefly   **(5x3=15)**

10. State and explain Sabine's formula to find the reverberation time of a room.
11. With a block diagram explain how a DC power supply functions
12. Convert the decimal number 256 to its equivalent binary number
13. List out the equipments required to calibrate an audiometer.
14. Explain the role of a digital signal processor in hearing aids.

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