

**First Year BASLP Degree Supplementary Examinations
September 2019
Biomedical Instrumentation and Acoustics
(2016 Scheme)**

Time: 3 hrs

Max marks: 80

- Answer all questions
- Draw diagrams wherever necessary

Essays

(4x10=40)

1. Which electronic component is used as preamplifier in hearing aids. Explain how does it work. With a block diagram explain the working of DC power supply
2. Impedance should be matched between any two stages of amplifiers. Justify. With neat block diagram explain the working principle of servo controlled voltage stabilizers. Differentiate semi-conductors, conductors and insulators with energy band diagram.
3. Which type of microphone is used in hearing aids. Explain its structure and principle of operation. What is reverberation time. Explain the significance of RT. Explain the method of measurement of RT with graph.
4. What is the unit of SPL. Explain the application of sound level meter. What are octave band filters. Explain the necessity of octave band filters in SLM.

Short Notes

(5x5=25)

5. Explain in detail the characteristics of sound.
6. What are computer networks. Explain different types of networks
7. What is calibration. Add a note on equipment setup and procedure for calibrating an audiometer
8. Explain how a DSP is implemented in a digital hearing aid.
9. Explain the working of a computerized immittance meter with a block diagram

Answer Briefly

(5x3=15)

10. Distinguish between digital and analog signals.
11. Explain in detail the memory devices in computer.
12. Explain digital filters.
13. Explain the role of filters in DC power supply.
14. SLM.
