



AJEENKYA

D Y PATIL UNIVERSITY

End Term Examinations (April 2019)

School: School of Engineering

Program: M.Tech (Bio Engineering)

Course: Advanced Biomedical Instrumentation

Course Code: BEN516

Semester: II

Max Marks: 40

Duration (mins): 120

PART-A

(Write Very Short / One Line Answer)

Note: Answer all questions. Each question carries 1 mark.

[10]

1. What is signal? List the name of bio signals.
2. Explain gauge factor.
3. Define transducer.
4. Draw the circuit diagram of instrumentation amplifier.
5. Explain perimeter.
6. Explain oximetry.
7. What is electro-oculogram?
8. What is artifacts.
9. Explain pH electrode.
10. What is the need of isolation amplifier?

PART-B

(Short Answer Questions – Not More Than 150 Words)

Note: Answer any FOUR questions. Each question carries 5 marks. [20]

11. Draw the active potential waveform and level the amplitude and time values.
12. List and discuss briefly the various types of transducers used for biomedical applications.
13. Why the partial pressure of oxygen and the partial pressure of carbon dioxide are useful physical parameters? Explain briefly how each can be measured.
14. What is the difference between a “bouncing ball” and nonfade display? Discuss their relative merits.
15. What do you understand by fibrillation? Draw a circuit of a direct current defibrillator?
16. Explain the working principle of electro-retinogram with block diagram.

PART-C

(Long/Case Study/Essay Type Answer Questions)

Note: Answer any ONE question. Each question carries 10 marks. [10]

17. What is the difference between electrical macro shock and microshock? In what parts of the hospital are microshock hazards likely to exist?
18. With diagram elaborate Tonometer for eye pressure measurement.