

NOVEMBER/DECEMBER 2019

BEEL54A — MEDICAL ELECTRONICS

Time : Three hours

Maximum : 75 marks



SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Write the necessity of bio- amplifiers.
2. Define biopotential.
3. What is ERG?
4. Give an example for electrode.
5. State the components of patient monitoring set up.
6. Mention the features of plethsmographic technique.
7. What is meant by high energy radiation?
8. Identify the name of isotopes for brain studies.
9. State the monopolar diathermy effect.
10. What is short wave diathermy?

SECTION B — ( $5 \times 5 = 25$  marks)

Answer ALL questions.

11. (a) Outline the isolation Amplifier.

Or

- (b) Explain the instrumentation amplifier.

12. (a) Describe the EMG.

Or

- (b) Outline the operations of ERG.

13. (a) Explain the measurement of heart beat rate.

Or

- (b) Discuss the blood flow meter by EM method.

14. (a) List out the applications of X-rays for diagnostics.

Or

- (b) Enumerate the applications of lasers in biological medium.

15. (a) Describe the short wave diathermy.

Or

- (b) Elucidate the microwave diathermy.

SECTION C — ( $3 \times 10 = 30$  marks)

Answer any THREE questions.

16. Explain the requirements of bio amplifier.

17. Describe the functional block of ECG.

18. Explain the measurement of blood pressure.

19. Discuss the therapeutic applications of isotopes.

20. Explain the ultrasonic diathermy.