EIGHTH SEMESTER B.TECH. (ENGINEERING) [09 SCHEME] DEGREE EXAMINATION, APRIL 2016

AI 09 803 L09 – ADVANCED BIOMEDICAL INSTRUMENTATION

Time : Three Hours   Maximum : 70 Marks

Part A

Answer all questions.

1. Name any *two* types of radiation detectors.

2. List out the applications of electrotherapy.

3. Compare Pressure cycled, Volume cycled and Time cycled ventilators.

4. What is need for AZTEC algorithm?

5. Define Free Induction Decay.

(5 × 2 = 10 marks)

Part B

Answer any four questions.

6. Explain the working principle of a PET scanner.

7. Mention the advantages of NMR imaging system.

8. Discuss electrodes used in surgical diathermy.

9. State the purpose of humidifiers, nebulizers and aspirators in ventilators.

10. Explain the working principle of microwave diathermy.

11. Write short notes on template matching.

(4 × 5 = 20 marks)

Part C

Answer all questions.

MODULE I

12. Explain the working principle of a rectilinear scanner with a neat sketch.

Or

13. Discuss the principles of NMR imaging system.

(10 marks)

Turn over

MODULE II

14. Discuss the principle of operation of a short wave diathormy unit.

Or

15. Explain the working principle of a hemodialyser with a neat block diagram.

(10 marks)

MODULE III

16. Explain the various types of ventilators in detail.

Or

17. Explain the working principle of an Anaesthesia machine with a neat block diagram.

(10 marks)

MODULE IV

18. Explain in detail about FAN algorithm and Turning point algorithm with suitable examples.

Or

19. Explain the working principle of an Arhythmia monitor with a suitable block diagram.

(10 marks)

[4 × 10 = 40 marks]