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B.E / B.Tech (Part time) ARREAR EXAMINATIONS, APRIL / MAY 2014

ELECTRONICS AND COMMUNICATION ENGINEERING

Sixth semester

PTEC 541/PTEC 041/PTEC9351 – MEDICAL ELECTRONICS
(Regulation 2002/2005/2009)

Time: 3 Hours

Answer ALL Questions

Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. What is action potential?
2. Write the various frequency ranges of the EEG.
3. What is HbO₂?
4. Using Fick technique calculate the cardiac output, given the following data: spirometer O₂ consumption 250ml/min, arterial O₂ content, 0.20ml/ml, venous O₂ content, 0.15ml/ml
5. What is dialysate?
6. What is defibrillation?
7. List the applications of Biotelemetry.
8. What is leakage current?
9. What is cryosurgery?
10. What is thermogram?

Part – B (5 x 16 = 80 marks)

11. What is Telemedicine? With a neat diagram explain its concepts in detail.
12. a) What are the various lead systems used in ECG measurement? Explain about Einthoven triangle.

Or
12. b) Explain in detail about the 10-20 EEG electrode configuration.
13. a) Explain in detail about the different types of Blood cell counter

Or
13. b) Explain the indirect blood pressure measurement technique in detail.
14. a) With a neat diagram explain the working of Heart lung machine in detail

Or

14. b) Explain the working principle of haemodialyser in detail.

15. a) Explain the working principle of shortwave diathermy in detail.

Or

15. b) With a neat diagram explain the ECG telemetry system in detail.