

D 40784

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Name.....

Reg. No.....

**SEVENTH SEMESTER B.TECH. (ENGINEERING) DEGREE
EXAMINATION, DECEMBER 2007**

EC EE 2K 705 A / PTEE 2K 703 (A)—BIOMEDICAL INSTRUMENTATION

Time : Three Hours

Maximum : 100 Marks

Answer all questions.

Part A

1. Differentiate between polarisable and nonpolarisable electrodes.
2. What do you mean by bioamplifier ?
3. Explain one scheme for direct blood pressure measurement.
4. Explain the various respiratory parameters.
5. Explain one therapeutical application of laser.
6. Explain the principle of blood pumps.
7. Write a note on electrical isolation and its relevance.
8. Explain one method for the measurement of PO_2 .

(8 × 5 = 40 marks)

Part B

9. (a) What is SD curve ? Explain in detail.
- (b) Explain the various types of electrodes with a mention on their applications.

(7 marks)

(8 marks)

Or

10. (a) With suitable diagrams explain the principle of electroencephalogram.

(8 marks)

- (b) Write a note on the practical hints for using electrodes.

(7 marks)

11. (a) Explain one method for indirect blood pressure measurement.

(7 marks)

- (b) Explain the principle of spirometry.

(8 marks)

Or

12. (a) Explain how phonocardiography works.

(7 marks)

- (b) Explain the operation and application of chamber plethysmography.

(8 marks)

Turn over

13. (a) Explain the principle of cardiac pacemaker as a simulator.
(b) Write a note on drug delivery devices.

(8 marks)

(7 marks)

Or

14. (a) Explain the method for gas flow rate measurement. Mention the application.

(8 marks)

- (b) Write a note on the design of infant incubators.

(7 marks)

15. (a) Write a note on physiological effects of electricity.

(7 marks)

- (b) Discuss macro and micro shock hazards.

(8 marks)

Or

16. (a) Write a note on electrical safety analyzers.

(7 marks)

- (b) Define pH. Explain one method for pH measurement.

(8 marks)

(4 × 15 = 60 marks)