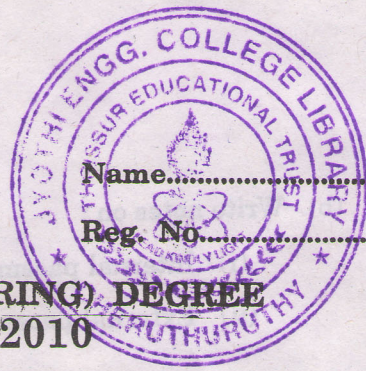


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**SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE
EXAMINATION, DECEMBER 2010**

AI 04 603—BIOMEDICAL INSTRUMENTATION

(2004 Admissions)

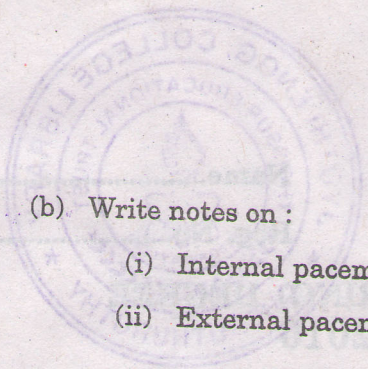
Time : Three Hours

Maximum : 100 Marks

Answer all questions.

- I. (i) Discuss about Electrode Theory.
(ii) Write in detail about resting and action potentials.
(iii) Write in short about Einthoven Triangle and the electrodes and leads used in ECG.
(iv) Discuss briefly about any one indirect method of measurement of blood pressure.
(v) Discuss briefly about neuronal communication.
(vi) Differentiate between internal and external pacemakers.
(vii) Explain in brief about the various components that constitute the whole blood.
(viii) Discuss briefly about hospital management. (8 × 5 = 40 marks)
- II. (a) Write notes on various biopotential electrodes. (15 marks)
Or
(b) In detail, discuss about the various problems encountered during biomedical measurement. (15 marks)
- III. (a) Write detailed notes on direct measurement of blood pressure. (15 marks)
Or
(b) With the help of a neat block diagram, explain in detail about the ECG machine. (15 marks)
- IV. (a) Write detailed notes about :
(i) Measurement of Gaseous diffusion.
(ii) Measurement of Gas distribution. (15 marks)
- Or*

Turn over



(b) Write notes on :

- (i) Internal pacemaker.
- (ii) External pacemaker.

(15 marks)

V. (a) Write in detail about :

- (i) Tests on Blood cells.
- (ii) Chemical tests conducted on blood cells (any two).

(15 marks)

Or

- (b) (i) Explain the principle behind ultrasonic imaging.
- (ii) What are the various modes associated with ultrasonic imaging ? Explain in detail.

(15 marks)

[4 × 15 = 60 marks]