A

Name:
ID No:

IV Year EEE&EIE – I Semester 2006-07
QUIZ 2
MEDICAL INSTRUMENTATION
EEE UC432/INSTR UC481

Date: 29/11/06
Max. Marks: 10

Time: 30mts
Weightage: 10%

Answer ALL Questions

1. Plethysmography refers to measurement of _____.

2. What does pseudo plethysmographs measure.

3. Name 3 types of plethysmography.

4. Name any 4 components of a cardiac care unit.

5. State the problems or limitations of patient monitoring equipment.

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KNOWLEDGE VILLAGE, DUBAI
IV Year EEE&EIE – I Semester 2006-07
Comprehensive Exam
MEDICAL INSTRUMENTATION
(EEE UC432/INSTR UC481)

Date: 21/12/06
Max. Marks: 40

Time: 3 Hrs
Weightage: 40%

Answer ALL Questions

1. (a) Describe the EEG activity during sleep. Show sample wave forms. (4M)
   (b) Explain the normal and abnormal cardiac rhythms. (4M)

2. (a) Draw the block diagram of a Electrocardiograph. (3M)
   (b) Explain the function of each block. (5M)

3. (a) What do you understand by fibrillation. (2M)
   (b) How do you correct for this. (3M)
   (c) Draw the circuit of a direct current defibrillator. Show the defibrillator discharge wave form. (3M)

4. (a) Explain the different parameters which indicate the condition of the breathing mechanism. (6M)
   (b) Show the figure clearly marking all the parameters. (2M)

5. Write notes on:
   (a) EMG measurements (4M)
   (b) Psycho physiological measurements. (4M)

Name:
ID No:

IV Year EEE&EIE – I Semester 2006-07
QUIZ 1
MEDICAL INSTRUMENTATION

Date: 21/9/06
Max. Marks: 10

Time: 30mts
Weightage: 10%

Answer ALL Questions

1. What are the factors adding to the difficulty of obtaining valid measurements.

2. Name any FOUR factors to be considered in the design of a medical instrumentation system.

3. Gage factor for a strain gage is given by the equation _____.

4. Name TWO disadvantages of Thermocouples..

5. Name the type of transducer to measure the following physical variables.
Velocity, Light

6. A cell in its resting state is said to be _____ and has a resting potential _____.

7. Draw the waveform of the action potential clearly showing the different regions.

8. Draw the ECG waveform and identify the prominent features.

9. Classify the different EEG frequency bands.

10. EMG stands for _____.

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IV Year EEE&EIE – I Semester 2006-07
Test II (Open book)
MEDICAL INSTRUMENTATION
EEE UC 432/INSTR UC481

Date: 19/11/06 Time: 50mts
Max. Marks: 30 Weightage: 20%

Answer ALL Questions

1. (a) What are the basic requirements of a bio potential amplifier. Explain. (5M)

   (b) What are the problems to be considered in the design of Electrocardiograph. Explain. (5M)

2. (a)Suggest a method to measure the blood pressure in an anesthetized patient lying on an operating table. Discuss the transducer details. (6M)

   (b) What are the effects of artifacts on ECG recordings. (4M)

3. (a) What is the information contained in phonocardiogram and electrocardiogram. Give the diagram to illustrate the same. (5M)

   (b) Explain the design considerations of a flow transducer to measure blood flow. (5M)

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IV Year EEE&EIE – I Semester 2005-06
Test1
MEDICAL INSTRUMENTATION
EEE UC 432/INSTR UC481

Date: 1/10/06
Max. Marks: 40

Time: 50mts
Weightage: 20%

Answer ALL Questions

1. (a) Explain the basic objectives of an Instrumentation system. (5M)
   (b) Discuss any FOUR problems encountered in measuring a living system. (5M)

2. (a) Suggest a transducer for measuring physiological displacements. Explain the same in detail. (6M)
   (b) Explain the principle of force summing member. (4M)

3. (a) Explain the basic electrode theory. (5M)
   (b) Briefly discuss the constructional features of Microelectrodes. (5M)

4. (a) Explain the working of a pH electrode. (5M)
   (b) Write brief note on ECG. (5M)