Code No: R05321004 **R05** **Set No. 2**

III B.Tech II Semester Examinations,December 2010
BIOMEDICAL INSTRUMENTATION
Electronics And Instrumentation Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Obtain the relation between the electrical and mechanical activities of the heart.
   (b) With a neat sketch describe the cardiac cycle. [8+8]
2. (a) Describe various load configurations that can be used to record EEG signals.
   (b) List the frequency ranges of various waves of EEG, and how they change with different activities. [8+8]
3. (a) Explain about different types of muscles and their electro physical properties.
   (b) Derive Nernst equation for cell membrane. [8+8]
4. Discuss in detail the methods of measuring blood flow by any three methods. [16]
5. (a) Discuss about the various parameters used in monitoring lung mechanics.
   (b) Explain how the therapeutic effect of ventilators can be ensured. [8+8]
6. (a) With the help of a diagram describe the different parts of venous blood tubing used in haemodialysis.
   (b) What are three physical processes involved to remove the waste products from blood? [8+8]
7. (a) List out the problems encountered when performing measurements from human beings.
   (b) Describe what precautions are taken to over come the problems encountered during performing measurements from human body [8+8]
8. (a) What is the half cell potential of an electrode and off set potential of the metals used in electrode discuss briefly.
   (b) Discuss the formation of electrical double layer at the interface of electrode electrolyte. [8+8]

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Code No: R05321004 **R05** **Set No. 4**

III B.Tech II Semester Examinations,December 2010
BIOMEDICAL INSTRUMENTATION
Electronics And Instrumentation Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Explain about different types of muscles and their electro physical properties.
   (b) Derive Nernst equation for cell membrane. [8+8]
2. (a) Obtain the relation between the electrical and mechanical activities of the heart.
   (b) With a neat sketch describe the cardiac cycle. [8+8]
3. Discuss in detail the methods of measuring blood flow by any three methods. [16]
4. (a) List out the problems encountered when performing measurements from human beings.
   (b) Describe what precautions are taken to over come the problems encountered during performing measurements from human body [8+8]
5. (a) What is the half cell potential of an electrode and off set potential of the metals used in electrode discuss briefly.
   (b) Discuss the formation of electrical double layer at the interface of electrode electrolyte. [8+8]
6. (a) Describe various load configurations that can be used to record EEG signals.
   (b) List the frequency ranges of various waves of EEG, and how they change with different activities. [8+8]
7. (a) Discuss about the various parameters used in monitoring lung mechanics.
   (b) Explain how the therapeutic effect of ventilators can be ensured. [8+8]
8. (a) With the help of a diagram describe the different parts of venous blood tubing used in haemodialysis.
   (b) What are three physical processes involved to remove the waste products from blood? [8+8]

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Code No: R05321004 **R05** **Set No. 1**

III B.Tech II Semester Examinations,December 2010
BIOMEDICAL INSTRUMENTATION
Electronics And Instrumentation Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Describe various load configurations that can be used to record EEG signals.
   (b) List the frequency ranges of various waves of EEG, and how they change with different activities. [8+8]
2. (a) What is the half cell potential of an electrode and off set potential of the metals used in electrode discuss briefly.
   (b) Discuss the formation of electrical double layer at the interface of electrode electrolyte. [8+8]
3. (a) Discuss about the various parameters used in monitoring lung mechanics.
   (b) Explain how the therapeutic effect of ventilators can be ensured. [8+8]
4. (a) Obtain the relation between the electrical and mechanical activities of the heart.
   (b) With a neat sketch describe the cardiac cycle. [8+8]
5. Discuss in detail the methods of measuring blood flow by any three methods. [16]
6. (a) List out the problems encountered when performing measurements from human beings.
   (b) Describe what precautions are taken to over come the problems encountered during performing measurements from human body [8+8]
7. (a) With the help of a diagram describe the different parts of venous blood tubing used in haemodialysis.
   (b) What are three physical processes involved to remove the waste products from blood? [8+8]
8. (a) Explain about different types of muscles and their electro physical properties.
   (b) Derive Nernst equation for cell membrane. [8+8]

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Code No: R05321004 **R05** **Set No. 3**

III B.Tech II Semester Examinations,December 2010
BIOMEDICAL INSTRUMENTATION
Electronics And Instrumentation Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Discuss in detail the methods of measuring blood flow by any three methods. [16]
2. (a) List out the problems encountered when performing measurements from human beings.
   (b) Describe what precautions are taken to over come the problems encountered during performing measurements from human body [8+8]
3. (a) Explain about different types of muscles and their electro physical properties.
   (b) Derive Nernst equation for cell membrane. [8+8]
4. (a) With the help of a diagram describe the different parts of venous blood tubing used in haemodialysis.
   (b) What are three physical processes involved to remove the waste products from blood? [8+8]
5. (a) What is the half cell potential of an electrode and off set potential of the metals used in electrode discuss briefly.
   (b) Discuss the formation of electrical double layer at the interface of electrode electrolyte. [8+8]
6. (a) Describe various load configurations that can be used to record EEG signals.
   (b) List the frequency ranges of various waves of EEG, and how they change with different activities. [8+8]
7. (a) Discuss about the various parameters used in monitoring lung mechanics.
   (b) Explain how the therapeutic effect of ventilators can be ensured. [8+8]
8. (a) Obtain the relation between the electrical and mechanical activities of the heart.
   (b) With a neat sketch describe the cardiac cycle. [8+8]

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