Code No: 07A71101   **R07**   **Set No. 2**

IV B.Tech I Semester Examinations,NOVEMBER 2010
REHABILITATION ENGINEERING
Bio-Medical Engineering

Time: 3 hours   Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
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1. Describe the FSR sensors giving its characteristics. [16]

2. Explain the following with respect to Guidecane:

    (a) Guidance signals

    (b) Information transfer. [8+8]

3. Describe the terms:

    (a) Computer access

    (b) Acceleration methods. [8+8]

4. Explain the term traditional devices. [16]

5. In general explain the concept of service robots for rehabilitation and assistance.
    [16]

6. Explain the terms:

    (a) Audiometer

    (b) Augmentation. [8+8]

7. (a) With neat diagrams explain various tools required for taking Anthropometric data?

    (b) What is the need for Anthropometry and discuss various sources of Anthropometric data? [8+8]

8. Explain the following terms:

    (a) FES

    (b) HAS. [8+8]

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Code No: 07A71101   **R07**   **Set No. 4**

IV B.Tech I Semester Examinations,NOVEMBER 2010
REHABILITATION ENGINEERING
Bio-Medical Engineering

Time: 3 hours   Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
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1. Discuss the ergonomics aspects to be considered in the designating devices. [16]

2. Explain the working of pneumatic cylinder action in a swing phase controller used in the intelligent prosthetic knee design. [16]

3. Discuss the terms:

   (a) Subjective measurement

   (b) Objective measurement. [8+8]

4. Describe the mode of access of environment to computers in controlling the human needs. [16]

5. Explain the language representation methods with respect to augmentative communication. [16]

6. In detail describe the various kinds of hand prostheses. [16]

7. Explain how the improvement with respect to orientation and mobility takes place in the case of blind people. [16]

8. Discuss various Augmentative and substitutive devices for the persons suffering with hearing impairment? [16]

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Code No: 07A71101 R07 Set No. 1

IV B.Tech I Semester Examinations,NOVEMBER 2010
REHABILITATION ENGINEERING
Bio-Medical Engineering

Time: 3 hours   Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
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1. Discuss the different kinds of hearing aid that enhances hearing of the persons who are suffering from hearing impairment. [16]

2. Describe the electronic hardware implementation of Guidecane device with a neat sketch. [16]

3. What do you mean by environmental control? Explain with example. [16]

4. Compare any two kinds of arm prostheses with respect to design and its utility to the common man. [16]

5. Compare the design of traditional device and the information device. [16]

6. Describe the acceleration methods that are employed in augmentative communication. [16]

7. With neat sketch explain the function of bionic glove that helps in restoring grasping power in persons with tetraplegia. [16]

8. Describe in detail any two methods of Anthropometric Measurements? [16]

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Code No: 07A71101 | R07 | Set No. 3

IV B.Tech I Semester Examinations,NOVEMBER 2010
REHABILITATION ENGINEERING
Bio-Medical Engineering

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
⋆ ⋆ ⋆ ⋆ ⋆

1. Describe the behaviour of different kinds of processes involved in rehabilitation.
   [16]

2. Discuss the role of robotic manipulation aids on the human beings. [16]

3. Describe the software implementation of Guidecane device with necessary algorithm. [16]

4. Explain the following terms:

   (a) Visual system

   (b) Visual augmentation. [8+8]

5. Describe the terms:

   (a) Traditional devices

   (b) Process control. [8+8]

6. Describe the three force system employed to be required in an orthosis to control a valgus hindfoot due to weakness in the hindfoot supinators. [16]

7. What are AAC systems? Discuss various components of AAC systems? [16]

8. Explain the involuntary feedback in a sensory control system employed in Otto Bock prosthesis. [16]

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