Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – April / May – 2017**

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| **Code :** | **15EI2023** | **Duration :** | **3hrs** |
| **Sub. Name :** | **SENSORY AND MOTOR REHABILITATION** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| Q. No. | Sub Div. | Questions | Course  Outcome | Marks |
| 1. | a. | Identify the roles and responsibilities of rehabilitation engineers. | CO3 | 10 |
| b. | Classify the functions of rehabilitation personnel in the society. | CO2 | 5 |
| c. | List the problems faced by the disabled subjects in daily life. | CO1 | 5 |
| (OR) | | | | |
| 2. | a. | Discuss the models in design of assist devices. | CO2 | 10 |
| b. | Explain the parameters considered in design of assist devices. | CO2 | 10 |
| 3. | a. | Mention the types of sensors that can be integrated with assist devices. | CO1 | 10 |
|  | b. | Explain any two sensors with its applications. | CO1 | 10 |
| (OR) | | | | |
| 4. | a. | Classify the types of actuators. | CO1 | 5 |
| b. | Explain the working of stepper motor. | CO1 | 5 |
| c. | Identify few applications of stepper motor as a actuator. | CO2 | 10 |
| 5. |  | Illustrate the criterion and evaluation methods in tread mill robots. | CO3 | 20 |
| (OR) | | | | |
| 6. | a. | Discuss the computer based rehabilitation methods. | CO2 | 10 |
|  | b. | Discuss the criterion for computer controlled Gait trainings. | CO3 | 10 |
| 7. | a. | Discuss the methods of rehabilitation of elbow and wrist. | CO1 | 10 |
| b. | Identify few advantages to the physical therapist. | CO1 | 10 |
| (OR) | | | | |
| 8. | a. | Discuss the methodology of artificial intelligence with a flow diagram. | CO1 | 10 |
| b. | Explain its application in rehabilitation. | CO3 | 5 |
| c. | Explain the operation of gyro based wheel chair. | CO1 | 5 |
|  | | **Compulsory:** |  |  |
| 9. | a. | Classify the types of wheel chair and mention its functions in detail. | CO3 | 10 |
|  | b. | Identify the devices used for the listed applications: lifting of patients, climbing in stairs, handling old aged subjects and explain its functions. | CO1 | 10 |