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Roll No.

223253A

**5th Sem. / Medical Electronics
Subject : Rehabilitation Engineering**

Time : 3 Hrs.

M.M. : 60

SECTION-A

Note: Multiple Choice Questions. All Questions are compulsory. (6x1=6)

- Q.1 What can be a benefit of preventive rehabilitation.
- a) Longer durations of hospital stays
 - b) Improved quality of life by maintaining good health
 - c) Over-reliance of medication for recovery
 - d) Increased dependence on caregivers.
- Q.2 Which joint in the human body allows for the widest range of movement.
- a) Hinge joint
 - b) Ball and socket joint
 - c) Pivot joint
 - d) Saddle joint
- Q.3 What characterizes a concurrent force system.
- a) Forces cause rotational motion
 - b) Forces act in opposite directions
 - c) Forces intersect at a common point
 - d) Forces are parallel to each other

- Q.4 Which of the following is a type of wheeled mobility device specifically designed to be more portable
- Standard wheelchair
 - Light weight wheelchair
 - Electric power wheelchair
 - Standing power wheel chair
- Q.5 What feature of powered wheel chairs allows users to transition from a seated to a standing position
- Lightweight wheelchairs
 - Sports wheelchairs
 - Standing power wheel chairs
 - Power assisted manual wheel chairs
- Q.6 Which of the following materials in known for providing a light weight yet strong frame for a wheel chair.
- | | |
|-----------------|-------------|
| a) Plastic | b) Aluminum |
| c) Carbon fiber | d) Steel |

Section-B

Note: Objective/Completion type questions. All questions are compulsory. $(6 \times 1 = 6)$

- Q.7 Expand FES.
Q.8 What is sensory Augmentation.
Q.9 Expand TTS.

- Q.10 What is parallel force system.
Q.11 What is Orthotics.
Q.12 What is Auditory Vision Substitution.

Section-C

Note: Short answer type Question. Attempt any eight questions out of Ten Questions. $(8 \times 4 = 32)$

- Q.13 Write the characteristics of current force systems.
Q.14 Explain the component of Preventive Rehabilitation.
Q.15 Write the general properties of connective Tissues.
Q.16 Explain the type of Auditory Vision Substitution.
Q.17 Write the difference in Cochlear Implants and Hearing Aids.
Q.18 Write the working of FES.
Q.19 Explain the wheel chair Features and Categories.
Q.20 Write the Benefits of Tactile Vision Substitution.
Q.21 Give a brief overview of Motion.
Q.22 Explain the design principles of Human Joints.

Section-D

Note: Long answer questions. Attempt any two question out of three Questions. $(2 \times 8 = 16)$

- Q.23 Explain joint and its types.
Q.24 Explain OCR and its working.
Q.25 Explain wheelchair structure and component Design in brief.