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**Question Paper Code: 59713**

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2020

Seventh Semester

Biomedical Engineering

15UBM702 – HUMAN ASSISTIVE DEVICES

(Regulation 2015)

Duration: One hours

Maximum: 30Marks

PART A - (6 x 1 = 6 Marks)

**(Answer any six of the following questions)**

1. The record used to detect electrical changes in the heart muscle as the heart is beating is called a (an) CO1- R  
(a) Echocardiogram (b) Electrocardiogram  
(c) Electroencephalogram (d) Sphygmomanometer
2. 120 to 140 mm of mercury is an adults normal CO1- U  
(a) Systolic pressure (b) Diastolic pressure  
(c) Peristalsis pressure (d) Water pressure
3. In peritoneal dialysis (PD), draining out the dirty fluid and putting in the clean fluid is called CO2-R  
(a) A replacement (b) A hemo cleaning (c) An exchange (d) A dialysate
4. How many times a week dialysis must be done CO2- R  
(a) Every day (b) Once a week (c) Twice a day (d) Thrice a week
5. The tiny hairs that keep mucus and dirt out of your lungs are called CO3- U  
(a) Lung hair (b) Stubble (c) Bronchitis (d) Cilia
6. When you inhale your lungs \_\_\_\_ CO3- R  
(a) Inflate (b) Turn purple (c) Deflate (d) Disappear
7. Devices that assist a person with walking are classified as \_\_\_\_\_ devices. CO4- U  
(a) Ambulatory (b) Ankle-foot  
(c) Spinal (d) Knee-ankle-foot
8. Fusion of a joint to prevent motion is termed as CO4- R  
(a) Arthrodesis (b) Osteotomy (c) Arthroplasty (d) Arthrotomy

9. The physical structure of Robot which moves around is called \_\_\_\_\_. CO5- U  
(a) Manipulators (b) End effectors  
(c) Joints (d) Links
10. Which of the following terms is not one of the basic parts of a robots ? CO5- U  
(a) Peripheral tools (b) End effectors (c) Controller (d) Drive

PART – B (3 x 8= 24 Marks)

**(Answer any three of the following questions)**

11. Explain the pulsatile and continuous type blood pump in oxygenators. CO1- U (8)
12. Discuss the different types of dialyzers with necessary diagrams. CO2-U (8)
13. Discuss the various levels of deafness and hearing aids. CO3- Ana (8)
14. Describe about types of haptic devices with a neat block diagram. CO4- Ana (8)
15. Describe the flexion and extension in robotics. CO5- Ana (8)