AMBROSE. OTHNIEL. COMPUTER ENGINEERING.

18/ENG02/021

1) Sensors for Biomedical Application.

The Function is to Convert Various Form of Stimuli into electrical Signal for analysis that can be used to assist with Surgery, Scans, Or diagnosing a patient.

Examples Include:

(i) Glucose bio Sensors
(ii) Lactate biosensors.
(iii) Ethanol bio Sensors

Others include.

(iv) Pressure Sensor in → Oxygen Concentration
(v) Temperature Sensors → Ventilators
(vi) Image Sensors → Cardiology

Actuators in biomedical applications

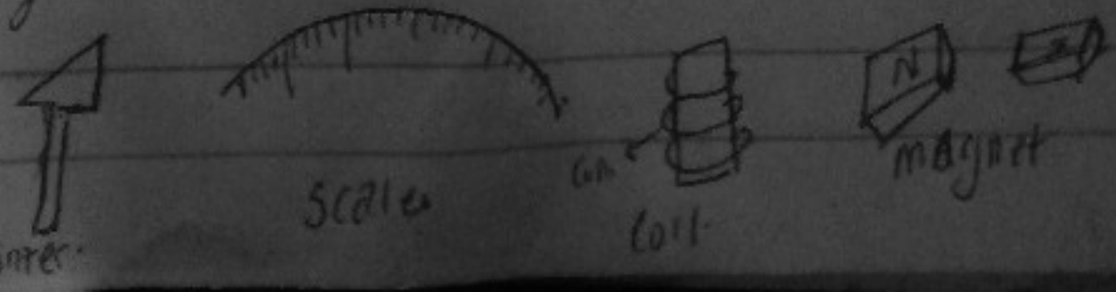
The actuator perform physical movement based on electrical Signal & a Source of energy. They are linear Actuators used in biomed, it provides linear movement

Examples

(i) Wheel Chair actuators
(ii) Medical bed actuators
(iii) Ventilators.
(iv) Robotic prosthetic limbs

Component of a basic measuring instrument.

(i) Pointers.
(ii) Scale.
(iii) Coil
(iv) Magnets



3) Description of two medical measurent instrument

(i) ~~5~~

(c) Electronic thermometer: It works by putting a voltage across its metal probe & measuring how much current flows through it.

If the probe is put in boiling water, the water's heat makes electricity flow through the probe less easily. So the resistance goes up by a precisely measurable amount. A microchip inside the thermometer measures the resistance and converts it into a measurement of temperature.

(ii.) - Sphygmomanometer (Blood pressure gauge).

Its a device that measures ~~the~~ blood pressure.

Digital Bp monitor.

Uses an inflatable air-bladder cuff, a battery powered air pump and a pressure sensor for sensing arterial wall vibrations to measure blood pressure from an artery - This is known as oscillometric method.