High Yield Hints - BIOMEDICAL TECHNOLOGY

X-Radiography Provides detailed images of the dense parts of the body. If the body is exposed to x rays some of the rays pass through the body and fall on the X ray film. In the X ray film the dense parts appear as shadows.

CRT Cathode Ray Tube This is the monitor used in many biomedical instruments to observe the image

DSA Digital Substraction Angiography. A technique that produces clear views of the blood flow and blocks in the blood vessels.

Angiograph It is the recorded image of the internal organs observed in the DSA instrument.

CAT Computerized Axial Tomography Technique used to study the internal organs. A number of images of the internal organs are recorded and then analyzed using computer to reconstruct the image.

MRI Magnetic Resonance Imaging MRI detects the presence of water in the body parts. The patient is exposed to a magnetic field and water rich and water poor parts of the organs can be distinguished. Water poor regions indicate dead parts.

PET Positron Emission Tomography Radiolabeled materials like glucose is introduced in to the body through trip. Glucose distributes in the body and the radioactive material decay and emits positrons. This produces flashes and is recorded. This gives a 3D image. Active tissue takes more glucose than inactive tissue. This part appears as bright area in the image. This helps to detect tissue damage in brain.

Sonography It uses ultra sonic sound to detect defects in the internal organs. Ultra sonic sound with a frequency between 1 and 15 MHz is passed through the body and reflected sound is collected. The reflection depends on the density of the tissue. The reflected sound is collected by the transducer and processed by the computer to get an image.

Doppler Effect Sonography is used to detect the flow of blood through the heart. It provides pictures of the blood flow. Different coloures will be formed based on the distance between the blood flow and the transducer.

ECG Electro Cardio Graph used to monitor the functioning of the heart. During heart beat electrical signals appear in the skin, which can be detected using electrodes and recorded.

EEG Electro Encephalo Graph Used to detect the functioning of brain. It detects and record the electrical waves produced by the brain.

Polygraphy Technique used to detect a persons mental state. It can be used as a lie detector. It uses various parameters like ECG, EEG, BP, skin resistance etc.

EMG ElectroMyoGraph Records muscle activity
EOG ElectroOculoGraph Records eye defects.

CCD ChargeCoupledDevice Front part of the endoscope. It has many light sensitive cells that Produces the image of the internal organs.

Laproscope Endoscopy used to detect defects in the uterus and fallopian tubes. Using laproscopy Sterilization can be done without surgery.

Laser surgery Surgical treatment using laser. Action of laser is localized so that it can be used to Heal lesions without surgery.

Argon laser surgery Used in eye surgery.

Immuno suppressive drugs Used after organ transplantation or plastic surgery. Suppress the Immune system of the body and prevents tissue rejection. Eg. Cyclosporin

Prosthesis Modern surgery deals with implantation of artificial body parts.

Artificial pacemaker Pacemaker is the part of heart that produces heart beats. Artificial Pace maker is a small battery operated device implanted on the chest beneath the skin .It produces electrical signals for the heart beat for about 10 years.

Angioplasty Technique used to detect blocks in the coronary artery. A balloon catheter is introduced through the vein of arm or leg and a white dye is sprayed to locate the block. The block is then removed by inflating a balloon connected at the tip of the catheter.

CABG Coronary Artery Bypass Grafting Grafting of blood vessel taken from the leg in the coronary artery to bypass the blood flow.

Cryosurgery Removal of body parts after freezing the tissue using liquid nitrogen at –196 degree.

Gene therapy Introduction of a normal gene in to a cell that contain a defective gene using a virus as vector.