NAME: NGUE TCHOUMBA EVE JOYCE

MATRIC NUMBER: 19/MHS07/006

COURSE CODE: PHA 210 ( MEDICAL BIOTECHNOLOGY)

QUESTION: DISCUSS IN DETAILS THE ASPECTS OF MEDICAL BIOTECHNOLOGY

Medical biotechnology is the use of living cells and cell materials to research and produce pharmaceutical and diagnostic products that help treat and prevent human diseases. Most medical biotechnologists work in academic or industrial settings. Medical biotechnology is the use of living cells and cell materials to research and produce pharmaceutical and diagnostic products that help treat and prevent human diseases. Most medical biotechnologists work in academic or industrial settings. In academic laboratories, these professionals conduct experiments as part of medical research studies; industrial biotechnologists work toward developing drugs or vaccines. The medical biotechnology field has helped bring to market microbial pesticides, insect-resistant crops, and environmental clean-up techniques. The field of medical biotechnology is experiencing rapid growth in recent years, leading to the development of several innovative techniques for preventing, diagnosing, and treating diseases

Biotechnology is commonly used to improve medicines due to the advantages and piece of knowledge it provides such as understanding the genetic composition of the human species foundational structure of hereditary diseases manipulation and repairing of damaged genes to cure diseases.

How is Biotechnology used in medicine

There are numerous methods applied to biotechnology such as gene treatment recombinant DNA technology. A more targeted approach is called polymerase establishment revenge which uses genetics along with DNA particles to make a projected illness and put in replace them with healthy genes in the physical body in place of the harmed cells.

Medical Biotechnology has improved tremendously in the recent decades which lead to the multiple innovative diagnose and treat diseases. More advanced and innovative methodologies include genomics , pharmaceuticals , DNA sequencing, cell culture, interference DNA and genome editing have effectively

regenerative medicine , tissue engineering , antibiotics ,with the steady improvements in the research and development, medical biotechnology can surely become a well-received foundation in health science.

APPLICATIONS OF MEDICAL BIOTECHNOLOGY IN MEDICINE

BIOPHARMACEUTICAL

Biopharmaceuticals do not contain any chemicals and use targeted organisms to synthesize the medicine successfully. Big molecules of proteins are the typical origin of biopharmaceuticals. When they are inside the human body , they target dangerous and hidden parts of the disease and obliterate them. Today, scientists and researchers are aiming to etxtend and develop biopharmaceutical medicines which can be used to fight diseases related to heart, hepatitis and cancer.

PHARMACOGENOMICS

Pharmacogenomics is the technique that leverages the persons’s heredity information to choose the best biotechnological medicine for their illness. This studies the body system’s response to certain medications. With the use of pharmacogenomics , medical companies can produce medicines that depend on the proteins compounds , and RNA particles based on the chosen qualities and infections applicable. Synthesized medicines are almost guaranteed to improve remedial effects, in addition to diminishing farm to other nearby cells. With the knowledge of the person’s hereditary inclinations, specialists can ascertain how well the patient’s body can prepare and process a medication doses and decide the correct amount of medication doses.

RAPID DEPLOYMENT OF VACCINES

A global pandemic is a real issue and has always proven its powerful grip on humanity. Through Biotechnology , scientists and researchers can quickly pinpoint precursors or markers that can cause severe illnesses and diseases. As a result , they can synthesize vaccines quickly against any dangerous pandemic sickness. Ina study on vaccines and biotechnology , researchers found a great decline illnesses when patients were administered with a vaccine produced through biotechnology

MEDICAL AND ETHICAL ISSUES OF BIOTECHNOLOGY.

While there are great advancements and positives to medical biotechnology anything this fast growing and powerful is bound to come with some concerns and issues. Medical biotechnology has advanced to develop organ culture , produce artificial blood and to perform transgenesis. The organ culture is performed to precisely model functions of an organ in numerous states and conditions by the usage of the existent in viro organ itself. Clinical trials are being conducted for the first generation of blood substitutes.

Examples of medical biotechnology

Strides – Strides have been made in the development of antibiotics that combat pathogens for humans. Many plants are grown and genetically engineered to produce the antibodies.