Name:Barnabas Oluwatobi Emmanuel

Department: Medical Laboratory Science

Matric Number: 18/MHS06/021

Course: MCB 202

ASSIGNMENT!!

1. Discuss microbial variation and hereditary in bacteria

2. Explain microbial recombination

Answer!!

1a). Bacteria Variation:When a bacterial cell divides, the two daughter cells are generally

indistinguishable. Along these lines, a solitary bacterial cell can deliver a huge populace of indistinguishable cells or clone. On strong medium, a clone is showed as an effortlessly segregated province. Sporadically, an unconstrained hereditary change happens in one of the phones. This change (transformation) is heritable and given to the descendants of the variation cell to create a subclone with qualities unique in relation to the first (wild sort) parent. This is named vertical legacy. Be that as it may, if the change is valuable, the subclone may overwhelm the wild sort populace. This is a case of how development is coordinated by regular choice. Unconstrained changes are of two classes: (1) point transformation and (2) DNA adjustment. Bacterial variety can likewise happen by level exchange of hereditary material starting with one cell then onto the next.

1(b) Bacterial Heredity

This is the investigation of how hereditary data is moved, either structure a

specific bacterium to its posterity or between interbreeding lines of microscopic organisms, and how the hereditary data is communicated. Once in a while, hereditary variety or the exchange of hereditary data between microorganisms offers ascend to transformations. The huge sizes of bacterial populaces guarantee that even incredibly uncommon hereditary qualities occasions are probably going to happen. This hereditary variety makes it feasible for singular individuals from immense populaces of microorganisms to develop new characteristics quickly.

2). Explain Microbial Recombination

It is a type of genetic recombination in bacteria characterized by DNA transfer

from one organism called donor to another organism as recipient. This process occurs in three main ways:

• Transformation: The uptake of exogenous DNA from the surrounding environment

• Transduction: The virus - Mediated transfer of DNA between bacteria •Conjugation: The transfer of DNA from one bacterium to another via cell-to-cell contact

The final result of conjugation, transduction and transformation is the production of genetic recombinants, individuals that carry not only the genes they inherited from their parent cells but also the genes introduced to their genomes by conjugation, transduction, and transformation.

Recombination in bacteria is ordinarily catalyzed by a RecA type of recombinase. These recombinases promote repair of DNA damages by homologous recombinations.

The ability to undergo natural transformation is present in at least 67 bacterial species. Natural transformation is common among pathogenic bacterial species. Bacterial transformation is carried out by numerous interacting bacterial gene products.