FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA
DEPARTMENT OF PLANT BIOLOGY
FIRST SEMESTER BTECH. EXAMINATION, 2017/2018 SESSION

COURSE CODE: PLB 413
COURSE TITLE: CYTOGENETICS OF PLANTS
COURSE UNIT: 3
TIME ALLOWED: 2 HOURS

INSTRUCTION: ***ANSWER ANY FOUR (4) QUESTIONS IN ALL; TWO (2) QUESTIONS FROM EACH SECTION***

SECTION A

1 a i. Define the term Mutation.
ii. With the aid of a diagram, explain the different types of structural chromosomal mutation
b Write notes on the following types of chromosomes:
i. Metacentric ii. Telocentric iii. Acrocentric iv. Holocentric

2 a. Prophase stage is the most important stage of meiosis. Discuss
b i. Using a well labeled diagram, describe a typical plant cell.
ii. State the functions of each cell organelles mentioned above

3 a. Describe the term polyploidy and state the different types of polyploidy.
b. Write notes on non-disjunction of chromosomes.

SECTION B

5 a. Distinguish between allopolyploid and autopolyploid
b. The diploid number of an organisms is 12. How many chromosomes would be expected in
i. monosomic ii. Trisomic iii. Tetrasomic iv. Nullisomic v. Triploid
c. Write notes on the following:
i. Alpha Particles ii. Neutron Particles iii. Alkylators

6 a. Discuss the interrelationship between evolution, species and organisms.
b. Define Mutation fixation
c. Explain effects of Mutagens on living organisms.

7 a. Describe the cytology of haploid and triploid
b. Discuss the roles of polyploidy in plant breeding