BOWEN UNIVERSITY, IWO
DEPARTMENT OF BIOLOGICAL SCIENCES

2010/2011 SECOND SEMESTER EXAMINATION

BLY 120: INTRODUCTORY CELL BIOLOGY

Answer **Section A** and one question each from sections **B** and **C**.

Time: 2hrs 20 mins.

SECTION A

1. (a) Give **five** differences between plant and animal cells.
   (b) Explain the terms:
   (i) Homologous chromosomes (ii) Haploid chromosomes
   (c) Explain the following:
   (i) Phenotypic ratio (ii) Monohybrid cross
   (iii) Replication of DNA (iv) Dominant gene

(30 Marks)

SECTION B

2. (a) What are the functions of the following organelles:
   (i) Mitochondria (ii) Lysosomes
   (iii) Plastids (iv) Cell membrane

(20 Marks)

3. Use relevant diagrams to describe the following processes
   (i) Cell cycle (ii) Prophase of mitosis
   (iii) Anaphase of mitosis (iv) Prophase I of meiosis

(20 Marks)

SECTION C

4. (a) In what ways has the study of genetics helped man in combating health related problems.
   (b) It was discovered that red flower was dominant over white flower in some clock plants (*Mimbilis jalopa*). When a red flower was crossed with white flower, the F_1 hybrids were pink.
   (i) What will be F_2 genotypic and phenotypic ratio if the F_1 hybrids are interbred?
   (ii) If a tall plant having white flowers is crossed with a short plant with red flowers, what will be the result? *(20 Marks)*

5. (a) What are biological variations?
   (b) Assume that green colour is dominant over yellow colour in apple. If a tall, green coloured fruited plant is cross-pollinated with a short yellow fruited plant, what will be the results of the cross?
   (c) How many will be tall-coloured, short-coloured, tall-white and short-white?

(20 Marks)