



**NATIONAL OPEN UNIVERSITY OF NIGERIA**

**Plot 91, Cadastral Zone, Nnamdi Azikiwe Express way, Jabi-Abuja.**

**FACULTY OF SCIENCE  
JANUARY 2018 EXAMINATION**

**PROGRAMME**

**COURSE CODE: BIO 303  
COURSE TITLE: GENERAL CYTOLOGY  
CREDIT UNIT: 3  
TIME ALLOWED: 2HOURS  
TOTAL MARKS: 70%**

**INSTRUCTION: ANSWER FOUR QUESTIONS IN ALL BUT  
QUESTION ONE IS COMPULSORY**

- 1a. Define the term Radioisotopes? **2marks**
- b. List three methods of detecting Radioisotopes? **6marks**
- c. List two advantages and three disadvantages of Autoradiography. **5marks**
- d. List two types of electron microscopes. **4marks**
- e. Describe three autoradiography methods **3marks**
- f. state the principle of electron microscope **5marks**

**25marks**

- 2a. What is Numerical Variation? **5marks**
- b. List three types of Chromosomal and two types of Numerical variations. **5marks**
- c. what are karyotypes and their basic characteristics? **5marks**

**15marks**

- 3a. Mention five general cytogenetic procedures and their roles. **5marks**
- b. List five applications of cytogenetics. **10marks**

**15marks**

- 4a. State five molecular composition of the cell. **5marks**
- b. Describe briefly the different structural levels of proteins. **10marks**

**15marks**

- 5a. Describe five stages in mitosis. **10marks**
- b. list five stages of growth and differentiation of embryonic cells. **5marks**

**15marks**