**NATIONAL OPEN UNIVERSITY OF NIGERIA**

**Plot 91, Cadastral Zone, NnamdiAzikiwe 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**