



NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI - ABUJA
FACULTY OF SCIENCE
Department of Pure and Applied Sciences
June 2021 EXAMINATION¹²³⁴

BIO 303: GENERAL CYTOLOGY

Time allowed: 2hrs

Credit Units: 2

Instruction: Answer question ONE (1) and any other THREE (3) questions.

1a. Mention five (5) disadvantages of electron microscope (5 marks)

1b.i Explain monoploid number (2 marks)

ii. Mention three (3) causes of Aneuploidy (3 marks)

1c. Discuss the role of proteins as cellular constituents (10 marks)

1d. Give an account of functions of lysosome (5 marks)

2a. What is centromere? (2 marks) Give two functions of centromeres (3 marks).

2b. Write notes on

i Karyotypes (3 marks)

ii ideograms (2 marks)

2c. Give an account of the functions of lysosome (5 marks)

3. Discuss the following types of chromosomal aberrations

i. Deletion (4 marks)

ii. Translocation (4 marks)

iii. Duplication (4 marks)

iv. Inversion (3 marks)

4. Explain the following cytogenetic procedures (15 marks)

i. Specimen of Interest

ii. Hypotonic Treatment

iii. Metaphase Arrest

iv. Slide Preparation

v. Creation of Karyogram

5. Write notes on the following areas of application of cytogenetics

i. Cytogenetics in Sex Determination (5 marks)

ii. Detection of Variation (5 marks)

iii. Application in Medical Diagnosis (5 marks)