



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 EXAMINATION

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)