



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

Faculty of Health and Applied Sciences

Department of Health Sciences

QUALIFICATION: BACHELOR OF MEDICAL LABORATORY SCIENCES	
QUALIFICATION CODE: 08BMLS	LEVEL: 6
COURSE: ANATOMICAL PATHOLOGY 2B	COURSE CODE: ANP621S
DATE: NOVEMBER 2019	SESSION:
DURATION: 3 HOURS	MARKS: 100

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER(S)	Mr Simon Israel
MODERATOR:	Dr Munyaradzi Mukesi

INSTRUCTIONS	
<ol style="list-style-type: none">1. Answer all questions.2. Please write neatly and legibly.3. Do not use the left side margin of the exam paper. This must be allowed for the examiner.4. No books, notes and other additional aids are allowed.5. Mark all answers clearly with their respective question numbers.	

Permissible material

Non programmable calculator is allowed.

THIS QUESTION PAPER CONSISTS OF 6 PAGES (Including this front page)

SECTION A (30 MARKS)

QUESTION 1

[15]

Evaluate the statements in each numbered section and select the most appropriate answer.

- 1.1 Anton van Leeuwenhoek (1632-1723) developed his own microscope. He was the second person to record the appearance of human cells. (1)
- a. True
 - b. False
- 1.2 Robert Hooke (1635-1703) improved the design of the microscope. (1)
- a. True
 - b. False
- 1.3 Schwann proposed all life began as a multiple cell; all animal tissues were composed of cells. (1)
- a. True
 - b. False
- 1.4 Mueller (1845) published a book in which considerable attention was given to the microscopic appearance of cancer cells. (1)
- a. True
 - b. False
- 1.5 August Köhler (1893) introduced the Köhler illumination whilst working at Zeiss. (1)
- a. True
 - b. False
- 1.6 The earliest phase of cytology began with the English scientist Robert Hooke's microscopic investigations of cork in 1666. (1)
- a. True
 - b. False
- 1.7 Viruses are not quite living organisms, but when inside a living host cell they show some features of a living organism. (1)
- a. True
 - b. False

- 1.8 Prokaryotic cells have a complex overall structure. (1)
- a. True
 - b. False
- 1.9 Hand-washing is considered the most important single procedure for preventing and controlling the spread of infection. (1)
- a. True
 - b. False
- 1.10 George Papanicolaou is known as Father of modern science. (1)
- a. True
 - b. False
- 1.11 Toxic materials are less capable of causing death by ingestion, skin contact, or inhalation at certain specified concentrations. (1)
- a. True
 - b. False
- 1.12 Each MSDS has important information about: health & environmental hazards, safety precautions, disposal, emergency and physical properties. (1)
- a. True
 - b. False
- 1.13 In a conventional Pap test, cells are placed on a glass slide, and then fixed and stained with a combination of dyes. (1)
- a. False
 - b. True
- 1.14 There are estimated about 6×10^{13} cells in a human body, of about 320 different types. (1)
- a. False
 - b. True
- 1.15 Not every specimen received in the Cytology Laboratory is considered highly infectious. (1)
- a. False
 - b. True

QUESTION 2

[15]

2.1 Point out the functions of the following components of the light microscope.

- 2.1.1 Eye pieces (2)
 - 2.1.2 Resolving nose pierce (1)
 - 2.1.3 Objectives (1)
 - 2.1.4 Mechanical stage controls (1)
 - 2.1.5 Condenser (1)
 - 2.1.6 Filters (3)
 - 2.1.7 Light source (1)
- 2.2 What are the practical applications of the Giemsa stain (Romanovsky)? (5)

SECTION B (MARKS 25)

QUESTION 3

[25]

- 3.1 Point out 4 steps in the Papanicolaou Staining Procedure. (4)
- 3.2 Define the following:
- 3.2.1 Regressive Staining (3)
 - 3.2.2 Progressive Staining (2)
- 3.3 Name and describe briefly the common contaminants which might be found in a stained slide by Papanicolaou Method. (6)
- 3.4 Describe squamous metaplasia process in the female genital tract. (10)

SECTION C (MARKS 20)

QUESTION 4

[20]

- 4.1 Briefly describe the following:
- 4.1.1 Nucleocytoplasmic ratio (1)
 - 4.1.2 Chromatin pattern (2)
 - 4.1.3 Pyknotic (1)
 - 4.1.4 Vesicular (1)
 - 4.1.5 Hyperchromasia (1)
 - 4.1.6 Hypochromasia (1)
 - 4.1.7 Navicular cells (1)
 - 4.1.8 Cytolysis (2)
- 4.2 What are the reasons for hormonal evaluation on serial vaginal smears? (3)
- 4.3 Which Gonadotropic hormone plays an important role in the secretion of:
- 4.3.1 Oestrogen (1)
 - 4.3.2 Progesterone (1)
- 4.4 Indicate the Maturation Index pattern% for the following:
- 4.4.1 Newborn (1)
 - 4.4.2 Postmenopausal (1)
 - 4.4.3 Pre-ovulatory (1)
- 4.5 Propose 2 viruses known to infect the female genital tract? (2)

SECTION D (MARKS 25)

QUESTINE 5

[25]

- 5.1 Predict the high-risk Human Papilloma Virus (HPV) types associated with pre-cancerous lesions and invasive cancer of the cervix? (5)
- 5.2 Describe cytomorphology of Dysplasia. (10)
- 5.3 Describe the diagnostic criteria of Keratinizing Squamous Cell Carcinoma. (10)

End of Examination