



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF INFORMATICS AND INNOVATIVE SYSTEMS
UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR SCIENCE IN
SECURITY AND FORENICS
4th YEAR 1st SEMESTER 2018/19 ACADEMIC YEAR
KISUMU CAMPUS**

COURSE CODE: IIT 3447

COURSE TITLE: BIOMETRIC AUTHENTICATION TECHNOLOGIES

EXAM VENUE: STREAM: BSc Computer Forensics

DATE: December 2018 EXAM SESSION:

TIME: 2.00 HOURS

INSTRUCTIONS:

- 1. Answer Question 1 (Compulsory) and ANY other two questions**
- 2. Candidates are advised not to write on the question paper**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room**

QUESTION ONE: 30 MARKS

- a) Define what biometric are and what they are used for. **(4 Mark)**
- b) Differentiate between the following terms
- i) Face recognition and fingerprint recognition
 - ii) Iris recognition and retina scan
 - iii) Signature recognition and keystroke dynamics
- (6 marks)**
- c) Suggest suitable biometric authentication systems to be in securing the following installations
- i) Office desktop
 - ii) University Exams Server
 - iii) KRA itax platform
 - iv) IEBC Server
 - v) Your Smartphone
- (5 marks)**
- d) A biometric identity is the unique physical features of your person that can be used to identify you. This technology gives you immediate access to authoritative information on key industry developments and covers the industry on a worldwide scale. What are the five basic features of an ideal biometric system? **(5 marks)**
- e) Mention at least FIVE privacy issues of biometrics authentication **(5 Marks)**
- f) What are the key steps in a biometric authentication process **(5 Marks)**

QUESTION TWO (20 MARKS)

- a) Explain the major functional units in a standard biometric authentication **(6 Marks)**
- b) How does biometrics compare to other access authentication technologies? **(5 Marks)**
- c) Biometrics are coming, along with serious security concerns, draw some of the areas this means **(5 Marks)**
- d) Name the major components of a biometric system **(4 Marks)**

QUESTION THREE (20 Marks)

- a) There are a number of applications where biometric systems are useful. Mention and explain some of the areas **(8 Marks)**

- b) Biometrics can be categorized into two main areas, behavioral and physiological. Outline three examples of behavioral and FIVE examples physiological types **(8 marks)**

- c) Mention three components that measure the performance of a biometric system **(3 Marks)**

- d) What is EER? (**1 Marks**)

QUESTION FOUR (20 Marks)

- a) The performance measurements of a biometric system are closely tied to False Reject Rate (FRR) and False Accept Rate (FAR). Explain in details what each has for the users of biometric technologies **(10 Marks)**

- b) There are various reasons for processing signals. The biometric systems, require voice processing for various reasons, state them **(5 MARKS)**

- c) Biometric technologies scan certain physical characteristics to confirm a person's identity. Describe the traits. **(5 Marks)**

QUESTION FIVE (20 Marks)

- a) Compare and contrast between Identification and Authentication **(6 Marks)**

- b) Discusses some of the Frauds that happen in industries which Biometrics technologies could help curb **(8 Marks)**

- c) With the help of well labeled diagram, elaborate how the pattern recognition concept works **(6 Marks)**