JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF INFORMATICS AND INNOVATIVE SYSTEMS

DEPARTMENT OF COMPUTER SCIENCE & SOFTWARE ENGINEERING

UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE

COMPUTER SECURITY AND FORENSICS

4TH YEAR 1ST SEMESTER 2015/2016 ACADEMIC YEAR

MAIN CAMPUS

COURSE CODE: IIT 3415

COURSE TITLE: NETWORK MANAGEMENT AND SECURITY

EXAM VENUE: STREAM: COMPUTER SECURITY AND FORENSICS

DATE: EXAM SESSION:

TIME:

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) Describe what is a network management system   (3Marks)

(b) Define the following terminologies.
- (i)   Network management application (NMA)   (3 marks)
- (ii)   User datagram protocol (UDP)   (3 marks)
- (iii)   Internet control message protocol(ICMP)   (3 marks)
- (iv)   Router   (3 marks)
- (v)   Routing   (3 marks)
- (vi)   Structure management information (SMI)   (3 marks)
- (vii)   PDU   (3 Marks)

(c) Briefly describe SNMP Entity   (6 Marks)

QUESTION TWO 20 MARKS

(a) Describe two scenarios in which a network manager would benefit from having network management tools   (8 marks)

(b) Describe briefly three of the messages type used in simple network management protocol(SMNP)   (9 marks)

(c) Briefly describe the main role played by management information base(MIB) (3marks)

QUESTION THREE 20 MARKS

(a) Briefly describe the five key areas that compromise the network management protocol (NMP)   (10 Marks)

(b) Describe the four main tasks performed by network management entity (NME) (8 Marks)

(c) Define Abstract Syntax Notation One (ASN.1) as used in simple network management protocol (SNMP)   (2 Marks)

QUESTION FOUR 20 MARKS

Briefly describe the functions of the following groups implemented in management information base (MIB)

- (i)   System group   (4Marks)
- (ii)   TCP group   (4Marks)
- (iii)   SNMP group   (4Marks)
- (iv)   IP group   (4Marks)
- (v)   ICMP group   (4Marks)

QUESTION FIVE

(a) Compare and contrast between SNMPv1 and SNMPv2   (6Marks)

(b) List two ways in which a network management system may be characterized as intergrated   (6 marks)

(c) Describe the two function performed by SNMP engine   (8 Marks)