



**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

MAIN CAMPUS

**UNIVERSITY EXAMINATIONS
2021 / 2022 ACADEMIC YEAR**

**THIRD YEAR EXAMINATIONS
BACHELOR OF COMPUTER SCIENCE**

COURSE CODE: BIT 321E

COURSE TITLE: SNMP PROTOCOLS

DATE: Wednesday 27th April, 2022 **TIME:** 10.00a.m. – 12.00noon

INSTRUCTIONS TO CANDIDATES

Question ONE (1) and Any OTHER 2 questions

TIME: 2 Hours

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 2 Printed Pages. Please Turn Over. ►

Question 1 30 MARKS

- a) i) Explain the three components of SNMP 3 marks
ii) List the alert message generated by SNMP agents 3 marks
- b) Describe three features added in SNMPv3 over SNMPv2? 6 marks
- c) Explain the SNMPv3 authentication protocol? 6 marks
- d) State what protocol can cause overload on a CPU of a managed device 3 marks
- e) in an MIB View Semantics explain i) OBJECT IDENTIFIER ii) SNMP-COMMUNITY-MIB iii) SNMP-USER-BASED-SM-MIB 9 marks

Question 2 20 marks

- a) Briefly describe the three benefits of GLBP? 6 marks
- b) Which protocol can cause overload on a CPU of a managed device? 4 marks
- c) In a GLBP network, who is responsible for the ARP request? 4 marks
- d) Using an example give a valid HSRP Virtual Mac Address? 3 marks
- e) Give the statement that describes VRRP object tracking? 3 marks

Question 3 20 marks

- a) State the ports used by SNMP i) agents ii) managers 4 marks
- b) using an appropriate diagram explain TCP protocol 8 marks
- c) using an appropriate diagram explain UDP protocol 8 marks

Question 4 20 marks

- a) Give 4 statements that describes SNMP operation? 8 marks
- b) A network administrator is analyzing the features supported by the multiple versions of SNMP. What are two features that are supported by SNMPv3 but not by SNMPv1 or SNMPv2c? 6 marks
- c) explain the protocol or service that can be configured to send unsolicited messages to alert the network administrator about a network event such as an extremely high CPU utilization on a router? 6 marks

Question 5 20 marks

- a) Explain the function of the MIB element as part of a network management system? 4 marks
- b) Describe the SNMP version that uses weak community string-based access control and supports bulk retrieval? 6 marks
- c) Describe 2 network administrator commands issued on a router: 4 marks
- d) list 3 Data Types used in all versions of SNMP. 6 marks