

**CHUKA**



**UNIVERSITY**

**UNIVERSITY EXAMINATIONS**

**EXAMINATION FOR THE AWARD OF DEGREE OF  
BACHELOR OF SCIENCE IN APPLIED COMPUTER SCIENCE**

**COSC 468: NETWORK MANAGEMENT**

**STREAMS: BSC (ACSC) Y4S2**

**TIME: 2 HOURS**

**DAY/DATE: THURSDAY 09/04/2020**

**2.30 PM – 4.30 PM**

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**INSTRUCTIONS:**

**\*\*Attempt Question 1 and any other TWO from SECTION B**

**\*\*Marks are awarded for clear and concise answers**

**\*ONLY the first THREE Questions attempted will be marked (Question one inclusive)**

**SECTION A-COMPULSORY**

**Question One [30 Marks]**

- (a) Describe SQL injection attack and at least one approach to mitigate it. **[4 Marks]**
- (b) Identify and give your understanding of **FOUR** parameters that can be used to measure QoS. **[4 Marks]**
- (c) Describe cross site scripting attack and one preventive mechanism. **[4 Marks]**
- (d) Briefly highlight key concerns addressed by each of the five **FCAPS** of network management. **[5 Marks]**
- (e) Briefly describe the following autonomous systems. **[6 Marks]**
- i. Stub (or Single-homed) AS
  - ii. Multi-homed Non-Transit AS
  - iii. Multi-homed Transit AS
- (f) Five components are used to backup a component whose reliability is 0.95. Determine the overall reliability of the system. **[4 Marks]**

(g) Highlight **THREE** circumstances that would make BGP use most appropriate. [3 Marks]

**SECTION B-Attempt TWO questions in this section**

**Question TWO [20 Marks]**

(a) Justify why a network administrator needs to measure network performance. [4 Marks]

(b) Discuss **FOUR** techniques for improving network performance. [16 Marks]

**Question THREE [20 Marks]**

(a) Briefly describe **THREE** steps of security risk assessment methodology in an organization. [6 Marks]

(b) Illustrate using a diagram the operation of IEEE 802.1x port-based access control mechanism. [8 Marks]

(c) Describe while giving examples **THREE** types of controls that can be used to manage security risks in an organization. [6 Marks]

**Question FOUR [20 Marks]**

(a) What role does SSL play in protecting http traffic. [2 Marks]

(b) Using a diagram, illustrate the **FOUR** phases of SSL handshake protocol. [12 Marks]

(c) Describe **THREE** key services provided by SSL record protocol. [6 Marks]

**Question FIVE [20 Marks]**

(a) Human element is an important consideration in any security issue because it contributes heavily to realization of attacks primarily because a human attacker is behind the development of an attack tool and will still be the one run the first attack command. Social engineering is an instance of human element in computer security.

(i) Describe how password pilfering attack may be carried out using social engineering. [4 Marks]

(ii) Describe **THREE** other techniques for password pilfering and corresponding preventive Measures. [6 Marks]

(b) Identity spoofing attacks allow attackers to impersonate a victim without using the victim's passwords. Describe **THREE** forms/types of Network spoofing attacks. [6 Marks]

(c) Differentiate between BGP and EGP as applied in autonomous systems. [4 Marks]

