**WRITTEN TEST**

**WCS IT POSITION**

**Date of Exam 27/9/2023**

**Candidate Name:**

**Duration: 2 Hrs**

**SECTION A**

1. What is cloud computing? List types of cloud computing (4Mks)
2. What is Microsoft 365? List apps available under Microsoft 365 (4Mks)
3. What is a malware? Document a process to be taken to manage a malware infestation on a network. (4Mks)
4. What is an SSD? Why is it significant to Computer’s performance? (4Mks)
5. Name desktop Operating Systems you are familiar with. List the version you would install on desktop computers (4Mks)

**SECTION B**

1. TCP/IP Reference Model: (4Mks)
   1. Describe the TCP/IP Reference Model
   2. Indicate key features / network devices used in each layer.
2. What is DHCP and why is it important on the network (4Mks)
3. Firewall (6Mks)
4. What is a firewall? Describe its purpose by use of a diagram.
5. What firewalls are you familiar with? Provide some of their features.
6. Describe demilitarized zone (DMZ) in terms of firewall configuration.
7. Define HTTP, HTTPS and SSH, their purpose and the standard ports they use respectively? (3Mks)
8. What is the difference between PING and TRACERT commands that are commonly used in network troubleshooting? Give examples where you would use each of the commands? (3Mks)
9. Network Topology: (5Mks)
10. What is a Network Topology.
11. List, draw and describe two common network topologies that are used today in medium sized organizations.
12. What is an IPv4 address? What are the different classes of IPv4? (4Mks)
13. What are Private and Special IP addresses? Please list these for each IPV4 class(4Mks)
14. What is the DNS? Describe the various DNS zones. (4Mks)
15. Given the following IP address 192.168.1.1/29 Please answer the following:(8Mks)
16. What is the network address?
17. What is the broadcast address?
18. How many hosts address is in this /29 subnet?
19. List all the usable IP addresses (hosts) in this subnet

**SECTION C**

1. Describe and draw a network topology you have implemented/managed. Explain the design, various components, and their functions in detail? (10Mks)
2. Organization A runs on a very basic network, designed for a user population of 20 users. The organization will grow into a 500-user organization in the next 4 months. Describe the process and plan you would use to respond to this change. Provide the design (before and after), including all the network components to support this growth. (10Mks)
3. How would you go about monitoring a large-scale corporate network? Described tools you are familiar with and how they work (5Mks)
4. Describe what happens when you enter google.com in the web browser till the page loads? (5Mks)
5. We want to make sure our network is secure. What security measures would you put in place? (5Mks)