REPUBLIC OF KENYA

NATIONAL OCCUPATIONAL STANDARDS

FOR

NETWORK SYSTEM TECHNICIAN

KNQF LEVEL 5

PROGRAMME CODE: 0612454A

SETUP COMPUTER NETWORK

UNIT CODE: 0612 451 06A

UNIT DESCRIPTION:

This unit covers the competencies required to setup a computer network. It involves following: assemble computer network components, test computer network connectivity, document computer network configurations and conduct computer network user training.

ELEMENTS AND PERFORMANCE CRITERIA

Elements These describe the key outcomes which make up workplace functions	**Performance Criteria** These are assessable statements which specify the required level of performance for each of the elements ***(Bold and italicized terms are elaborated in the range)***
1. Assemble computer network components	1.1. ***Network components*** are assembled as per IEEE 802.3 and IEEE 802.11 networking standards.
	1.2. ***Network components*** are connected according to IEEE 802.3 and IEEE 802.11 networking standards
	1.3. ***Network components*** and network devices are configured as per IEEE networking standards
2. Test Computer network connectivity	2.1. ***Network component*** performance is tested as per industry standards.
	2.2. Network performance is tested as per work procedure.
	2.3. ***Network testing*** report is generated as per work procedure
	2.4 ***Transmission Media*** are tested as per work procedure
3. Document Computer network configurations	3.1. ***Network component*** configurations are documented as per work procedure.
	3.2. Network data points are labeled as per work procedure
	3.3. Network topology design is labeled as per work procedure
4. Conduct Computer Network user training	4.1 Basic network navigation is conducted as per work procedure
	4.2 Common issues are Troubleshoot as per work procedure
	4.3 ***Data backup and recovery*** is performed as per work procedure

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

Variable	Range
1. **Transmission media** may include but not limited to;	○ Fiber ○ UTP ○ Coaxial ○ Radio ○ STP
2. **Network components** may include but not limited to;	○ Switches ○ Routers ○ Radio ○ Servers ○ Host
3. **Network testing** may include but not limited to;	○ Performance testing ○ Functionality testing ○ Security testing ○ Resilience and Recovery Testing ○ connectivity testing ○ Media testing ○ Bandwidth testing
4. **Data backup and recovery** may include but not limited to;	○ Data identification and classification ○ Backup strategy design ○ Selection of backup solutions ○ Implementation of backup procedures ○ Regular backup execution ○ Monitoring and verification

REQUIRED KNOWLEDGE AND SKILLS

This section describes the knowledge and skills required for this unit of competency.:

Required knowledge

- Network architecture
- Network components and devices
- Network types
- Safety Awareness
- Environmental conservation
- Workplace safety and health

Required skills

- Computer Literacy
- Critical thinking
- Communication skills
- Computational mathematics skills
- Problem-solving skills
- Analytical skills
- Creativity and innovation
- Network testing techniques
- Network security configuration
- Network configuration techniques

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills range.

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Set up a computer network as per work procedure 1.2 Tested network connectivity as per work procedure 1.3 Documented network configuration as per work procedure 1.4 Conducted network user training as per work procedure

2. Resource implications	The following resources should be provided: 2.1 Appropriately simulated environment where assessment can take place 2.2 Access to relevant work environment 2.3 Resources relevant to the proposed activities or tasks; including computers, media, routers, switches, ports etc
3. Methods of assessment	Competency in this unit may be assessed through: 3.1 Observation 3.2 Oral questioning 3.3 Portfolio of evidence 3.4 Interviews 3.5 Third party report 3.6 Practical assessment 3.7 Written tests
4. Context of assessment	This Competency may be assessed in a workplace or a simulated workplace
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.