NATIONAL VOCATIONAL QUALIFICATION

ICT SECTOR

QCF LEVEL 2 COMPUTER HARDWARE MAINTENANCE AND REPAIRS TECHNICIAN II

Mandatory Units

S/No /Unit No	Reference Number	NOS Title	Credit Value	Guided Learning Hours	Remark
1	**ICT/CMR/001/L2**	Observe Health and Safety Standards in Work Environments and Hazard Mitigation Measures	3	30	Level 2 QCF
2	**ICT/CMR/002/L2**	Understand the Concept and Application of Information Creation, Transmission and Reception	3	30	Level 2 QCF
3	**ICT/CMR/003/L2**	Perform Disassembling and Assembling of Computers	3	30	Level 2 QCF
4	**ICT/CMR/004/L2**	Use Measuring Instruments to Trace Faults in Computers	3	30	Level 2 QCF
5	**ICT/CMR/005/L2**	Perform General Maintenance and Repairs of Faulty Computers	3	30	Level 2 QCF
6	**ICT/CMR/006/L2**	Describe Management of Computer Hardware Maintenance and Repairs Business	3	30	Level 2 QCF
			18	180	

Optional Units

S/No /Unit No	Reference Number	NOS Title	Credit Value	Guided Learning Hours	Remark
7	**ICT/CMR/007/L2**	Apply the Fundamentals of Basic Electronics to Computer Hardware Maintenance and Repairs	3	30	Level 2 QCF
8	**ICT/CMR/008/L2**	Understand the Fundamental Principles of Using Printers, Photocopy Machines and Scanners	3	30	Level 2 QCF

NOTE: This is a 21 credit qualification, to achieve this qualification; Learners are required to achieve 18 credits from mandatory units and 3 credits from the optional units. Each Credit is equivalent to approx. 10 Guided Learning Hours (GLH). The Total Learning Hours will therefore consist of the GLH *plus* the independent learning hours of the candidate, which is generally 50% – 150% of the GLH. ***The actual Total Learning Hours for each Credit will then be a minimum of 15 hours***.

Qualification Purpose: This qualification is about a Computer Hardware Maintenance and Repairs Trade that is responsive to and reflects workers and employers' need in the work environment for all professional areas. It can be taken by all learners who wish to have competencies for the purpose of employment or enterprise creation.

NATIONAL VOCATIONAL QUALIFICATION

ICT SECTOR

National Vocational Qualification

LEVEL 2 ICT SECTOR

Unit 1: Observe Health and Safety Standards in Work Environments and Hazard Mitigation Measures

Unit Reference Number: ICT/CMR/001/L2

QCF Level: 2

Credit Value: 3

Guided Learning Hours: 30

Unit Purpose: The unit is to build the capacities of the learners to comply with health and safety standards in work environments and mitigate hazards.

Unit assessment requirements/evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out. ***Simulation is allowed*** in this unit and level.

Assessment methods to be used include:

1. Direct Observation/oral questions (DO)
2. Question and Answer (QA)
3. Recognition of Prior Learning (RPL)
4. Assignment (ASS)

UNIT 01

LEARNING OBJECTIVE (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type					Evidence Ref. Page No.			
LO 1: Apply Personal Health and Hygiene	1.1	Explain importance of wearing clean and appropriate Personal Protective Equipment in work environment									
	1.2	Work safely in compliance with health and safety and other relevant regulations and guidelines (Nigerian Factory Health and safety Act of 2015)									
	1.3	Demonstrate treatment of cuts, grazes and wounds.									
	1.4	Explain process of reporting, accident illness and infection to appropriate persons									
	1.5	Explain importance of maintaining good personal hygiene									
	1.6	Explain Nigerian Factory Health and safety Act of 2015 as it relates to computer operations and maintenance									
	1.7	Explain how to follow general rules on hygiene that must be observed									
	1.8	Identify correct Personal Protection Equipment such as head protection, foot protection, face and eye protection, hand and body protection and regulatory protection									
LO 2: Observe Safety and Security in the Workplace	2.1	Explain importance of working in healthy, safe and secure workplaces									
	2.2	Explain how to report accident or near misses to appropriate personnel									
	2.3	Carry out pollution control and waste disposal for organic and inorganic wastes									
LO 3: Describe Hazards Identification and Mitigation Methods in Work Environment	3.1	Identify hazards or potential hazards									
	3.2	State where information about health and hazards in your workplace can be obtained									
	3.3	Describe the types of hazards in workplace that may occur and how to deal with them									
	3.4	State hazards that can be dealt with personally and those that should be reported to appropriate personnel									
	3.5	Identify risk elements in your own work environment									
	3.6	Describe organizational security procedures and why these are important									
	3.7	Follow procedures of raising awareness of hazards									

LEARNING OBJECTIVE (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type					Evidence Ref. Page No.			
	3.8	Explain how to warn other people about hazards and why this is important									
	3.9	Explain why accidents and near misses should be reported and who they should be reported to									
LO 4: Demonstrate Emergency Procedures in workplace	4.1	Describe types of emergencies in workplace									
	4.2	Explain how to locate first-aid equipment and the registered first-aider in a workplace									
	4.3	Describe organizational emergencies procedures, in particular fire, and how these should be followed									
	4.4	State possible causes for fire in workplace									
	4.5	Describe how to minimize possibility of fire in workplace									
	4.6	Explain where to find alarms and how to set them off									

Learners Signature:	**Date:**
Assessors Signature:	**Date:**
IQA Signature (if sampled)	**Date:**
EQA Signature (if sampled)	**Date:**

NATIONAL VOCATIONAL QUALIFICATION

ICT SECTOR

National Vocational Qualification

LEVEL 2 ICT SECTOR

Unit 2: Understand the Concept and Application of Information Creation, Transmission and Reception

Unit Reference Number: ICT/CMR/002/L2

QCF Level: 2

Credit Value: 3

Guided Learning Hours: 30

Unit Purpose: The unit is to provide communications skills that will enable learners to inform others, imagine things, influence others, express their feelings and meet social expectations

Unit assessment requirements/evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out. ***Simulation is allowed*** in this unit and level.

Assessment methods to be used include:

1. Direct Observation/oral questions (DO)
2. Question and Answer (QA)
3. Recognition of Prior Learning (RPL)
4. Assignments(ASS)

UNIT 02

LEARNING OBJECTIVE (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type					Evidence Ref. Page No.			
LO 1: Interpret signs, symbols in computer industry	1.1	Apply signs, symbols and recording of information in work place									
	1.2	Recognize solving of problems using appropriate symbols and signs									
	1.3	Explain the importance of communication in the work environment									
LO 2: Explain the meaning of Information	2.1	Identify various sources of information in the computer industry									
	2.2	Explain how to pass information effectively									
	2.3	Recognize written instructions									
	2.4	Assimilate technical instructions									
LO 3: Use a Non- Complex Communication System in a Work Environment	3.1	Use simple verbal means to pass on necessary information									
	3.2	Describe use of non-verbal means to pass on necessary information e.g. body language									
	3.3	Interpret symbols and signs appropriately									
LO 4: Describe Sources of Information in a Work Environment	4.1	Locate sources of information in organization and work environment									
	4.2	Relate appropriately with sources of information									
	4.3	Use various information flow systems in work environment									
	4.4	Use information to avoid challenges in work situation									
LO 5: Demonstrate Usage of Communication Equipment	5.1	Select communication equipment in work environment in line with standards									
	5.2	Use communication equipment in work environment in line with standards									
LO 6: Apply critical thinking skills in a work place	6.1	Describe the process of critical thinking to solve personal and work related problems									
	6.2	Explain the core of critical thinking skills namely: Observation, Interpretation, Inference, Evaluation and Explanation									
	6.3	Apply critical thinking skills in realistic scenarios									

Learners Signature:	**Date:**
Assessors Signature:	**Date:**
IQA Signature (if sampled)	**Date:**
EQA Signature (if sampled)	**Date:**

NATIONAL VOCATIONAL QUALIFICATION

ICT SECTOR

National Vocational Qualification

LEVEL 2 ICT SECTOR

Unit 3: Perform Disassembling and Assembling of Computers

Unit Reference Number: ICT/CMR/003/L2
QCF Level: 2
Credit Value: 3
Guided Learning Hours: 30

Unit Purpose: This unit is to empower learners to disassemble and assemble computers during and after maintenance activities in a safe and professional manner.

Unit assessment requirements/evidence requirements:
Assessment must be carried out in real workplace environment in which learning and human development is carried out.

Assessment methods to be used include:

1. Direct Observation/oral questions (DO)
2. Question and Answer (QA)
3. Recognition of Prior Learning (RPL)
4. Assignments (ASS)
5. Witness Testimony (WT)
6. Work product (WP)

UNIT 03

LEARNING OBJECTIVE (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type					Evidence Ref. Page No.			
LO 1: Perform Disassemble and Assemble of Personal Computers	1.1	Boot off the computer systems (cold booting)									
	1.2	Disconnect the external cables									
	1.3	Remove the computer cover									
	1.4	Remove the following: i. Front panel connection; ii. Hard disk drive; iii. CD-ROM/DVD-ROM; iv. Power pack; v. Motherboard; vi. Motherboard cables and connectors; vii. Processor; viii. Cooling fan and heat sink; ix. RAM									
	1.5	Connect the following computer components: i. Motherboard; ii. Processor; iii. CR-ROM/DVD-ROM; iv. Hard disk drive; v. Power pack; vi. Hard disk drive (HDD) cable; vii. Restart cable; viii. RAM; ix. Power cable; x. Computer cover									
LO 2: Replace Motherboards and Processors	2.1	Remove the old motherboard									
	2.2	Identify the matching characteristics of the new and old motherboards									
	2.3	Replace the old with the new motherboard									
	2.4	Assess the performance of the old processor									
	2.5	Replace the old with the new processor									
LO 3: perform Replacement of Mass Storage Devices and Random Access Memory	3.1	Identify the factors to consider when replacing old mass storage devices and random access memory									
	3.2	Remove mass storage devices from the case									
	3.3	Perform removal and replacement of the integrated drive electronic (IDE) cable									
	3.4	Install new mass storage devices in the case									
	3.5	Carry out removal and installation of									

LEARNING OBJECTIVE (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type					Evidence Ref. Page No.			
		random access memory									

Learners Signature:	**Date:**
Assessors Signature:	**Date:**
IQA Signature (if sampled)	**Date:**
EQA Signature (if sampled)	**Date:**

NATIONAL VOCATIONAL QUALIFICATION

ICT SECTOR

National Vocational Qualification

LEVEL 2 ICT SECTOR

Unit 4: Use Measuring Instruments to Trace Faults in Computers

Unit Reference Number: ICT/CMR/004/L2

QCF Level: 2

Credit Value: 3

Guided Learning Hours: 30

Unit Purpose: This unit is about effective uses of measuring instruments to troubleshoot faulty computers and components.

Unit assessment requirements/evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

Assessment methods to be used include:

1. Direct Observation/oral questions (DO)
2. Question and Answer (QA)
3. Recognition of Prior Learning (RPL)
4. Assignment (ASS)
5. Witness Testimony (WT)

UNIT 04

LEARNING OBJECTIVE (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type					Evidence Ref. Page No.			
LO 1: Demonstrate knowledge of Measuring Instruments in Computer Hardware Maintenance and Repairs	1.1	Explain the following terms: i. Voltage; ii. Current; iii. Resistance; iv. Capacitance; v. Inductance; vi. Resistors; vii. Capacitors; viii. Diodes; ix. Transistors; x. Integrated circuits (ICs)									
	1.2	Describe the measuring instruments meant for computer hardware maintenance and repairs such as: i. Analog multi-meters; ii. Digital multi-meters; iii. Logic probe testers; iv. IC testers; v. Oscilloscopes									
	1.3	apply the measuring instruments listed in 1.2 above to trace faults									
LO 2: Apply Basic Problem Solving Techniques	2.1	Check the alternating (AC) and direct current (DC) power units of the computers									
	2.2	Check all internal and external components and cables in computers									
	2.3	Identify basic error messages and their meanings									
	2.4	Identify faulty computer sounds and their meanings									
	2.5	Search the World Wide Web for problem solving tips and tutorials									
LO 3: Perform testing on measuring Instruments In Computer Hardware Maintenance and Repairs	3.1	Perform continuity tests on fuses and cables									
	3.2	Measure voltage across the 20-pin ATX power connector, 4-pin internal drive and power connector									
	3.3	Follow the procedures for testing components and modules as specified in the installation manuals									

Learners Signature:	**Date:**
Assessors Signature:	**Date:**
IQA Signature (if sampled)	**Date:**
EQA Signature (if sampled)	**Date:**

NATIONAL VOCATIONAL QUALIFICATION

ICT SECTOR

National Vocational Qualification

LEVEL 2 ICT SECTOR

Unit 5: Perform General Maintenance and Repairs of Faulty Computers

Unit Reference Number: ICT/CMR/005/L2

QCF Level: 2

Credit Value: 3

Guided Learning Hours: 30

Unit Purpose: This unit is about applying fault diagnostic techniques to replace or repair faulty computers and components resulting to high degree of customers' satisfaction.

Unit assessment requirements/evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

Assessment methods to be used include:

1. Direct Observation/oral questions (DO)
2. Question and Answer (QA)
3. Recognition of Prior Learning (RPL)
4. Assignments (ASS)
5. Witness Testimony (WT)
6. WORK Product (WP)

UNIT 05

LEARNING OBJECTIVE (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type					Evidence Ref. Page No.			
LO 1: Trace Faults During Computer Hardware Maintenance and Repairs	1.1	Perform the basic troubleshooting procedures									
	1.2	Use measuring instruments to trace faults									
	1.3	Locate faulty components by visual inspection, open or short circuit test									
	1.4	Use multimeters to check the current flow and voltage on the motherboard									
	1.5	Replace module or components with other spares to eliminate faults									
LO 2: Clean Computer Systems During Hardware Maintenance and Repairs	2.1	Identify the following methods involved in cleaning computers: i. Blowing; ii. Dusting/Brushing; iii. Applying solutions									
	2.2	Disassemble the computer systems for cleaning or washing									
	2.3	Identify the basic tools required for system cleaning: i. Cloth; ii. Water; iii. Rubbing/Isopropyl alcohol; iv. Portable Vacuum; v. Foam/Cotton swabs									
	2.4	Use isopropyl alcohol and brushes to wash motherboards									
	2.5	Heat the motherboard with workstations after washing									
	2.6	Use air blower to remove dust and dirt inside the computers									
LO 3: Demonstrate the Ability to Unplug and Plug Computer Components During Troubleshooting	3.1	Apply “halt on” setting in the CMOS setup utility									
	3.2	Perform plugging and unplugging of the following internal components for error detection and correction: i. L2 cache; ii. Video card; iii. RAM; iv. Floppy drive disk (FDD) interface; v. CD-ROM power; vi. Hard disk drive (HDD) power									
	3.3	Carry out a “power on self-test (POST)” check to locate common faults in computers									

Learners Signature:	**Date:**
Assessors Signature:	**Date:**
IQA Signature (if sampled)	**Date:**
EQA Signature (if sampled)	**Date:**

NATIONAL VOCATIONAL QUALIFICATION

LEARNING AND DEVELOPMENT SECTOR

National Vocational Qualification

LEVEL 2 ICT SECTOR

Unit 6: Describe Management of Computer Hardware Maintenance and Repairs Business

Unit Reference Number: ICT/CMR/006/L2

QCF Level: 2

Credit Value: 3

Guided Learning Hours: 30

Unit Purpose: This unit is to impart basic managerial and entrepreneurial skills that will enable learners to set up and run computer hardware and maintenance repairs business successfully.

Unit assessment requirements/evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

Assessment methods to be used include:

1. Direct Observation/oral questions (DO)
2. Question and Answer (QA)
3. Recognition of Prior Learning (RPL)
4. Assignment (ASS)
5. Witness Testimony (WT)
6. Work Product (WP)

UNIT 06

LEARNING OBJECTIVE (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type					Evidence Ref. Page No.			
LO 1: Understand the Procedure to Set up a Computer Hardware Maintenance and Repairs Business	1.1	Describe the appropriate equipment and facilities for setting up computer hardware maintenance and repairs workshop									
	1.2	Identify appropriate locations for the business									
	1.3	Describe the appropriate size and layout for the workshop									
	1.4	Maintain clean, safe and secure work environment									
LO 2: Apply Managerial and Customer Service Principles to Computer Hardware Maintenance and Repairs Business	2.1	Describe how to attend to customers with faulty computers									
	2.2	Explain the normal documentation process when collecting and returning computers to customers									
	2.3	Demonstrate good communication and interpersonal skills to achieve customers satisfaction									
	2.4	Keep good records of income, expenses, assets and liabilities of the business									
	2.5	Estimate the cost of repair of faulty computers									
LO 3: Raise Funds or Capital for Computer Hardware Maintenance and Repairs Business	3.1	Propose start-up capital required for a computer hardware maintenance and repairs business									
	3.2	Identify various sources of capital to set up the business									
	3.3	Explain the returns on investment for the business									
	3.4	Maintain a good stock control and inventory of spare parts and modules									

Learners Signature:	**Date:**
Assessors Signature:	**Date:**
IQA Signature (if sampled)	**Date:**
EQA Signature (if sampled)	**Date:**

NATIONAL VOCATIONAL QUALIFICATION

ICT SECTOR

National Vocational Qualification

LEVEL 2 ICT SECTOR

Unit 7: Apply the Fundamentals of Basic Electronics to Computer Hardware Maintenance and Repairs

Unit Reference Number: ICT/CMR/007/L2

QCF Level: 2

Credit Value: 3

Guided Learning Hours: 30

Unit Purpose: The unit is about introducing the basic electronics to leaners, their functions and applications in computers

Unit assessment requirements/evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

Assessment methods to be used include:

1. Direct Observation/oral questions (DO)
2. Question and Answer (QA)
3. Recognition of Prior Learning (RPL)
4. Assignment (ASS)

UNIT 07

LEARNING OBJECTIVE (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type					Evidence Ref. Page No.			
LO 1: Understand the Applications of Resistors in Computers and Electronic Circuits	1.1	Explain the colour codes of small resistors									
	1.2	Identify the resistance of resistors using the colour code using: i. Four-band system; ii. Five-band system									
	1.3	Connect resistors together in: i. Parallel; ii. Series									
	1.4	Draw resistors in serial and parallel configurations									
	1.5	Use ohmmeter to determine total resistance of resistor configurations									
	1.6	Compare the ohmmeter readings with the calculated values									
LO 2: Apply Capacitors in Computers and Electronic Circuits	2.1	Explain the meaning of a capacitor									
	2.2	Discuss the applications of different types of capacitors in computers and other electronics									
	2.3	Draw the symbols of capacitors									
	2.4	Define the capacitance of a capacitor and its SI Unit									
	2.5	Connect capacitors together in : i. Series; ii. Parallel									
	2.5	Draw capacitors in serial and parallel configurations									
	2.6	Use multimeter to measure the current and voltage across the capacitor configurations									
LO 3: Understand the Operational Principles and Purpose of Inductors in Computers and Electronic Circuits	3.1	Describe an inductor and how it works									
	3.2	Define the inductance of an inductor and its SI Unit									
	3.3	Discuss the applications of inductors in computers and other electronics									
	3.4	Connect inductors together in : i. Series; ii. Parallel									
	3.5	Draw inductors in serial and parallel configurations									
	3.6	Use multimeter to measure the current and voltage across the inductor configurations									

LO 4: Understand the Concept and Applications of Filters in Computers and Electronic Circuits	4.1	Explain the meaning of a filter and its application in computers									
	4.2	Use a simple RC circuit to explain how low pass filter works									
	4.3	Draw a simple RC circuit to illustrate how high pass filter works									
	4.4	Draw a band pass filter circuit and show how it works									
	4.5	Discuss the band stop filter circuit and its applications									
	4.6	Use resistors and capacitors to construct the following filters: i. Low pass; ii. High pass; iii. Band pass; iv. Band stop									
LO 5: Understand the Purpose of Semiconductor Diodes in Computers and Electronic Circuits	5.1	Discuss semiconductor materials and effect of doping on these materials									
	5.2	Explain PN junction diode and its composition									
	5.3	State the difference between forward biased and reversed biased diodes									
	5.4	Apply diode in: i. Half wave rectification; ii. Full wave rectification; iii. Bride rectification									
	5.5	Identify the uses of Zener diode									
LO 6: Identify the Uses of Bipolar Junction Transistors and Field Effect Transistors in Computers	6.1	Use simple diagrams to explain the physical configuration and types of bipolar junction transistors									
	6.2	State the basic functions of transistors namely: i. Switching; ii. Amplification									
	6.3	Test the functionality of transistors									
	6.4	State the applications of the following in computers: i. Junction field effect transistors (JFET); ii. Metal oxide semiconductor field effect transistors (MOSFET)									
LO7: Understand the types and applications of Opto-electronics	7.1	Discuss optoelectronics and its two main categories: i. Light emitting; ii. Light detecting									
	7.2	Identify the following light emitting diodes and their uses: i. Visible-Light LED;									

		ii. Blinking; iii. Tricolor; iv. 7-Segment LED Display									
	7.3	Identity following light detecting devices and their applications: i. Photoresistors; ii. Photodiode; iii. Solar cell; iv. Phototransistor									
LO 8: Identify types and uses of Integrated Circuits (ICs) in Computers	8.1	Identify Integrated Circuits in circuit boards or motherboards									
	8.2	State the advantages and disadvantages of Integrated Circuits									
	8.3	Identify the basic types of IC packing in computers: i. TO-5 package; ii. Flat package; iii. Dual in line (DIL)									
	8.4	Draw the IC symbols									
	8.5	State the uses of the following ICs: i. Voltage regulator; ii. 555 Timer; iii. Operational Amplifiers									
	8.6	Construct simple electronic circuits or projects using common electronic components and ICs									

Learners Signature:	**Date:**
Assessors Signature:	**Date:**
IQA Signature (if sampled)	**Date:**
EQA Signature (if sampled)	**Date:**

NATIONAL VOCATIONAL QUALIFICATION

ICT SECTOR

National Vocational Qualification

LEVEL 2 ICT SECTOR

Unit 8: Understand the Fundamental Principles of Using Printers, Photocopy Machines and Scanners

Unit Reference Number: ICT/CMR/008/L2

QCF Level: 2

Credit Value: 3

Guided Learning Hours: 30

Unit Purpose: The unit is to enable leaners to operate printing, scanning and photocopying technologies in a work environment and perform simple maintenance on these devices.

Unit assessment requirements/evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

Assessment methods to be used include:

1. Direct Observation/oral questions (DO)
2. Question and Answer (QA)
3. Recognition of Prior Learning (RPL)
4. Assignment (ASS)
5. Witness Testimony (WT)

UNIT 08

LEARNING OBJECTIVE (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type					Evidence Ref. Page No.			
LO 1: Understand the Basic Operation and Maintenance of Printers	1.1	Explain various types of printers with their examples each: i. Impact; ii. Non-impact									
	1.2	Identify printer components and consumables									
	1.3	Describe the control panel functions of a printer									
	1.4	Identify the following printer interfaces with computers: i. Parallel port; ii. USB port; iii. Serial port; iv. Wireless (Bluetooth, Wi-Fi, Infrared); v. Small Computer System Interface (SCSI)									
	1.5	Perform installation and configuration of printers									
	1.6	Perform the following operations: i. Print documents; ii. Cancel print documents									
	1.7	Change printer settings to optimise performance									
	1.8	Perform replacement and refilling of printer cartridge/ink toner									
	1.9	Connect printers to a wired or wireless network									
LO 2: Apply Basic Maintenance Procedures to Local or Network Printers	2.1	Explain error codes and messages of printers									
	2.2	Use relevant diagnostic tools to eliminate faults									
	2.3	Review service and installation manuals									
	2.4	Isolate the problems of the printers									
	2.5	Replace parts and consumables as needed									
	2.6	Test run the repaired printer to ascertain its functionality									
	2.7	Install missing printers driver									
	2.8	Fix printer IP-Address problem (for printer connected on a network)									
LO 3: Understand the Basic Operation and Maintenance of Photocopy Machines	3.1	Identify parts of photocopy machine									
	3.2	Operate photocopy machine									
	3.3	Replace toner and other consumables									
	3.4	Clear paper jam and other error messages									

LEARNING OBJECTIVE (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type					Evidence Ref. Page No.			
LO 4: Understand the Basic Operation and Maintenance of Scanners	4.1	Identify parts of a scanner									
	4.2	Outline the operation of a scanner									
	4.3	Explain the types of scanner and their advantages: i. Handheld; ii. Flatbed; iii. Specialized									
	4.4	Connect a scanner to a computer									
	4.5	Perform installation of scanner and un-install it									
	4.6	Use scanner correctly									

Level	Resources
Two	1. All resources in NVQ Level One 2. Computer systems (dead and working) 3. Video clips 4. Logic probe testers 5. IC testers 6. Oscilloscopes 7. Cleaning fluid or spirit 8. Brushes 9. Electronic components, ICs 10. Printers 11. Scanners 12. Photocopying machines 13. Operational and Installation manuals 14. Formatting discs (Windows 7, 8/ Vista and any current versions)

Learners Signature:	**Date:**
Assessors Signature:	**Date:**
IQA Signature (if sampled)	**Date:**
EQA Signature (if sampled)	**Date:**