CCEK – NSQF ALIGNED PROGRAM

COURSE SYLLABUS

FOR

Computer Hardware & Networking

CCEK - NATIONAL SKILL DEVELOPMENT TRAINING PROGRAM

Computer Hardware & Networking

CCEK – NSDC course package covers the following Qualification Packs and leads to the following NSDC certifications. The students who successfully completed the course programs are entitled to get NSDC certification after undergoing the assessment process of NSDC as per the rules and regulations stipulated by NSDC from time to time.

SL. NO.	QUALIFICATIONS PACK	QUALIFICATIONS PACK CODE	NSQF LEVEL
1	**Service Engineer-IT Hardware** **Brief Job Description**: Service Engineer IT Hardware is responsible for attending to problems in IT hardware and related software systems problem either as a dedicated engineer at the customer premises (Facility Management) or remotely (Managed Services).	**ELE/Q4607**	**5**

COURSE DETAILS

Computer Hardware & Networking

EXAMINATION DETAILS

COURSE NAME	COURSE CODE	ELIGIBILITY	DURATION
Computer Hardware & Networking	G19	Diploma - After 10 (Electronics/Electrical/ Mechanical), 12th grade Pass	420

SL. NO.	EXAM	EXAM CODE	MAXIMUM MARK	INTERNAL	TOTAL MARK
THEORY PAPERS					
1	Introduction to IT Hardware	T001	100	50	150
2	Networking Fundamentals	T002	100	50	150
PRACTICAL PAPERS					
1	PC Assembling & Hardware Troubleshooting	L001	100	50	150
2	Software & Network Setup Lab	L002	100	50	150
TOTAL MARKS					
1	Total Examination Marks (Theory Online + Practical Examination)				400
2	Total Internal Marks				200
3	**Total Marks (Total Internal Marks + Total Examination Marks)**				**600**

Computer Hardware & Networking

INTERNAL MARK CRITERIA FOR EACH

SL NO.	MODULE	MODULE CODE	MAXIMUM MARK	INTERNAL MARK	TOTAL MARK
1	Introduction to IT Hardware	T001	100	50	150
2	Networking Fundamentals	T002	100	50	150
3	PC Assembling & Hardware Troubleshooting	L001	100	50	150
4	Software & Network Setup Lab	L002	100	50	150
	TOTAL		400	200	600

ATTENDANCE	GENERAL PERFORMANCE	INTERNAL EXAMINATIONS/ PROJECTS/ ASSIGNMENTS	TOTAL MARKS
5	5	40	50

COURSE SYLLABUS

FOR

Computer Hardware & Networking

COURSE	Computer Hardware & Networking	
TOTAL MARKS	Mark: 600	Internal Mark: 200
TOTAL HOURS	420 Hrs	

DEFENITION OF CREDIT

1 Credit	15Hrs Theory/ 30Hrs Practical
Skill Components	60 – 70 % of Total Credit

MODULES INCLUDED IN THIS SUBJECT

SL NO	MODULE NAME	CREDIT BREAKUP
1	Module 1: Introduction and orientation to the role of a Service Engineer – IT Hardware	**2**
2	Module 2: Process of managing customer IT hardware at facility	**3**
3	Module 3: process of managing customer system remotely	**2**
4	Module 4: Basic Health and Safety Practice	**1**
5	Module 5: Employability Skills	**2**
6	Module 6: On-the-Job Training	**4**
	Total	**14**

Training Outcomes

- Describe the process of managing customer IT hardware at facility.
- Describe the process of managing customer system remotely.
- Explain the importance of following inclusive practices for all genders and PwD at work.
- Demonstrate various practices to be followed to maintain health and safety at work.

MODULES

Module 1: Introduction and orientation to the role of a Service Engineer – IT Hardware

THEORY

- Describe the size and scope of the electronic industry and its subsectors.
- Discuss the role and responsibilities of a Service Engineer – IT Hardware.
- Describe various employment opportunities for a Service Engineer – IT Hardware.

PRACTICAL

- Knowledge of the ESDM
- Knowledge of the IT Hardware and its components
- Knowledge of the repairing and troubleshooting of the all the faults in the system
- Knowledge of the Reports and Logs of the Product repaired.

Module 2: Process of managing customer IT hardware at facility

THEORY

- Explain company's policies on: customer care, annual maintenance contracts, warranty.
- Explain different types of IT hardware and their module wise constitution.
- Describe the process of dismantling and assembling of hardware equipment.
- Explain vendor and incident management, including valid contract and deliverables.
- List different EUC, server, storage, networking, communication products.
- Explain company's documentation policy, including vendor's and customer's service level agreement (SLA).
- State various changes in technology of products and redundancy.
- Explain asset tracking and records maintenance.
- Explain various software such as Linux, MS Exchange, Auto CAD.
- Explain preloaded and new software as well as version update.
- List various tools used for monitoring and assessing system health.
- Explain organization's culture and typical customer profile.
- State various IPR restrictions imposed by the customer.

PRACTICAL

- Demonstrate how to troubleshoot software related problems and if needed, install standard and prescribed software on the system.
- Show how to identify and replace faulty module in the IT hardware system.
- Prepare sample records of date of purchase and warranty as well as any annual maintenance schedule.
- Show how to update records of assets not in use or issued to customers employees or returned.
- Demonstrate the process of monitoring servers, storage and networks for smooth work flow.
- Show how to maintain assets by keeping track of the appropriate temperature and dust environment.
- Show how to update records of daily activity including scheduled/unscheduled maintenance, warranty, software updates and expiry dates

Module 3: Process of managing customer system remotely

THEORY

- Explain different types of IT hardware and their remote monitoring tools.
- Explain different EUC, server, storage, networking and communication products.
- Explain electronics and electromechanical modules and their functions.
- Explain preloaded and new software as well as version update.
- State the changes in technology of products and redundancy.
- List various statistical tools for monitoring and reporting.
- Explain company's documentation policy and reporting structure.
- Explain asset tracking and records maintenance.
- Explain company's policies on customer care, annual maintenance contracts, warranty.
- Explain vendor and incident management
- Explain company's code of conduct and delivery standards.

PRACTICAL

- Demonstrate the use of monitoring tools to keep watch on critical hardware either 24x7 or as per contract.
- Demonstrate how to monitor EUC, server and storage administration, network operations and online systems.
- Show how to link the monitoring system to regional hub.
- Show how to configure systems manually or automatically.
- Demonstrate the use of statistical tools to develop intelligence and spot potential areas of disruptions.
- Show how to record downtime details.
- Prepare sample action plan and share with customer and/or vendor.

Module 4: Basic Health and Safety Practice

THEORY

- Discuss job-site hazards, risks and accidents.
- Explain the organizational safety procedures for maintaining electrical safety, handling tools and hazardous materials.
- Elaborate on electronic waste disposal procedures.
- Describe the process of disposal of hazardous waste
- List the name and location of concerned people, documents and equipment for maintaining health and safety in the workplace.
- Describe how to interpret warning signs while accessing sensitive work areas.
- Explain the importance of good housekeeping.
- Describe the importance of maintaining appropriate postures while lifting heavy objects.
- List the types of fire and fire extinguishers.
- Explain the importance of efficient utilisation of water, electricity and other resources.
- List the common sources of pollution and ways to minimize it.
- Describe the concept of waste management and methods of disposing hazardous waste.
- Explain various warning and safety signs.
- Describe different ways of preventing accidents at the workplace

PRACTICAL

- Demonstrate the use of protective equipment suitable as per tasks and work conditions.
- Prepare a report to inform the relevant authorities about any abnormal situation/behaviour of any equipment/system.
- Administer first aid in case of a minor accident.
- Demonstrate the steps to free a person from electrocution safely.
- Administer Cardiopulmonary Resuscitation (CPR).
- Demonstrate the application of defined emergency procedures such as raising alarm, safe/efficient, evacuation, moving injured people, etc.
- Prepare a sample incident report.
- Use a fire extinguisher in case of a fire incident.
- Demonstrate the correct method of lifting and handling heavy objects.

Module 5: Employability Skills

THEORY

- Discuss Explain constitutional values, civic rights, responsibility towards society to become a responsible citizen
- Discuss 21st century skills
- Explain use of basic English phrases and sentences.
- Demonstrate how to communicate in a well-behaved manner
- Demonstrate how to work with others
- Demonstrate how to operate digital devices
- Discuss the significance of Internet and Computer/ Laptops
- Discuss the need for identifying business opportunities
- Discuss about types of customers.
- Discuss on creation of bio-data
- Discuss about apprenticeship and opportunities related to it.

PRACTICAL

- List different learning and employability related GOI and private portals and their usage
- Show how to practice different environmentally sustainable practices. Exhibit 21st century skills like Self Awareness, Behavior Skills, time management, etc.
- Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone
- Demonstrate how to communicate in a well -mannered way with others.
- Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette
- Utilize virtual collaboration tools to work effectively
- Demonstrate how to maintain hygiene and dressing appropriately.
- Perform a mock interview.

Module 6: On-the-Job Training

THEORY & PRACTICAL

- Troubleshoot software related problems and if needed, install standard and prescribed software on the system.
- Identify and replace faulty module in the IT hardware system.
- Monitoring servers, storage and networks for smooth work flow.
- Update records of daily activity including scheduled/unscheduled maintenance, warranty, software updates and expiry dates.

- Monitor EUC, server and storage administration, network operations and online systems.
- Link the monitoring system to regional hub.
- Configure systems manually or automatically.
- Communicating effectively at the workplace.
- Applying health and safety practices at the workplace.