Model Curriculum

Field Technician – Computing and Peripherals

SECTOR: ELECTRONICS
SUB-SECTOR: IT HARDWARE
OCCUPATION: AFTER SALES SERVICE
REF ID: ELE/Q4601 VERSION 1.0
NSQF LEVEL: 4

Certificate

COMPLIANCE TO
QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARD

Is hereby issued by the

Electronics Sector Skills Council of India

for

Skilling Content : **Field Technician- Computing and Peripherals**

Complying to National Occupational Standards of

Job Role/QP : **Field Technician- Computing and Peripherals**, QP No : **ELE/Q4601 Level 4**

Date of Issuance : 08th May 2017
Valid up to* : 07th May 2018
*Valid upto the next QP Review Date or the date mentioned above (whichever is earlier)

Authorized Signatory
Electronics Sector Skills Council of India

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FIELD TECHNICIAN – COMPUTING AND PERIPHERALS

CURRICULUM / SYLLABUS

This course encompasses 4 out of 4 National Occupational Standards (NOS) of "Field Technician - Computing and Peripherals" Qualification Pack issued by "Electronic Sector Skill Council".

Program Name	**Field Technician – Computing and Peripherals**		
Qualification Pack Name & Reference ID. ID	ELE/Q4601 VERSION 1.0		
Version No.	1.0	**Version Update Date**	07-May-2017
Pre-requisites to Training	12th Pass/ Diploma Graduate		
Training Outcomes	**After completing this programme, participants will be able to:** • Ability to build interpersonal relationships, and have a customer centric approach • Develop critical thinking and conduct root cause analysis – Problem solving • Business Communication, email etiquette • Working with office package for reporting and documentation – MS-Word, Excel, PowerPoint • Installing and configuring the networking, servers and storage systems • Attending to field calls from client and Handle Complaints for system trouble shooting and repairs • Knowing the importance of SLAs and Company Processes		

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	**Hardware Essentials** **Theory Duration** (hh:mm) 15:00 **Practical Duration** (hh:mm) 22:00 **Corresponding NOS Code** ELE/N4602 ELE/N4603	• Understanding the different component of • computer , Assembly of system • Troubleshooting of the system • To understand layout, Components and from factors of mother broad. • To understand the form factors ,slot types and different memory types • To identify the types of Storage. To Recognize the methods of storage and different hardware components used storage. • To identify the types of hardware components in the computer and differentiate it. • Tounderstand the methods of troubleshooting storage, power supplies • To understand types of printer and scanner To recognize features used • Recognizethe types of laptop devices and to understand note book concepts. • Recognize of the component of computer,troubleshootingand installing and configuring of operating system and it drives. • To understand importance of work etiquette. To understand the methods safety measure to be used • This will be Multiple question types. • Presenting their learnt knowledge	• Desktops • Laptops • Netbooks and Notebooks • Laser Printers • Ink Jet Printers • Dot Matrix Printers • Power adapters for each
2	**Network Essentials** **Theory Duration** (hh:mm) 15:00 **Practical Duration** (hh:mm) 22:00 **Corresponding NOS Code** ELE/N4602 ELE/N4603	• To understand the networking, OSI Concepts Recognize the Network technologies. • To understand the types of application functionality • To understand the colour coding for the Ethernet cable to be crimping. Recognize network adaptor configuration • Recognize the network designed structure. • To understand the different configuration methods of device • To understand method of self-motivation, self confidence. • This will be Multiple question type. • Presenting their learnt knowledge	• Post cards • Screw Driver • Cables (RJ45) • Network switch • Routers
3	**Windows 7/10 Essentials**	• To understand features of windows client ,performance information ,tool configuration	• Videos • Powerpoint • Laptop

	Theory Duration (hh:mm) 15:00 **Practical Duration** (hh:mm) 22:00 **Corresponding NOS Code** ELE/N4602 ELE/N4603	• To understand the methods of installation, upgrading and its features • To understand the method Configuring, maintaining, backup and recovery • Recognize the methods of installation, configuration, system security, maintaining of backup, recovery and backup. • To understand the method basic functions to be done, service to be provided, communicate effectively in formal situations. • This will be Multiple question type. • Presenting their learnt knowledge	• Projector • Projector Screen • White Board
4	**Windows Server** **Theory Duration** (hh:mm) 15:00 **Practical Duration** (hh:mm) 22:00 **Corresponding NOS Code** ELE/N4602 ELE/N4603	• To understand Directory services and different functional levels • To understand methods of installing configuring Directory services. • To understand the methods of disaster recovery and backup. • Recognize the method of implementing secure domain, administrating and creation of user, maintaining group policies. • To understand the goals set, improving the reading skills • This will be multiple question type. • Presenting their learnt knowledge	• Videos • Powerpoint • Laptop • Projector • Projector Screen • White Board
5	**Linux Server** **Theory Duration** (hh:mm) 15:00 **Practical Duration** (hh:mm) 22:00 **Corresponding NOS Code** ELE/N4602 ELE/N4603	• Recognize the Linux features, basic commands • To understand the methods of installing, configuring server and services • To understand the method of fault analysis, filesystem corruption. • To understand method of installing, configuring network adaptor, basic services, managing of storage. • To understand the impact, body language, verbal communication, comprehension. • This will be Multiple question type. • Presenting their learnt knowledge	• Videos • Powerpoint • Laptop • Projector • Projector Screen • White Board
6	**IT Security fundamentals** **Theory Duration** (hh:mm) 15:00 **Practical Duration** (hh:mm) 25:00 **Corresponding NOS Code**	• To understand the method of installing, configuring, outlook and concepts of anti-virus. • To understand the methods of identifying types and indication of virus, worms, Trojan etc. • To understand the compatibility issues and common errors. Recognize basic security risks • To understand method s of system vulnerability and fixing them and methods of measure to prevent	• Videos • Powerpoint • Laptop • Projector • Projector Screen • White Board

	ELE/N4602 ELE/N4603	them. • To understand methods of having positive attitude, awareness, prioritize. • This will be Multiple question type. • Presenting their learnt knowledge	
7	**Concepts of ITIL v3** **Theory Duration** (hh:mm) 15:00 **Practical Duration** (hh:mm) 22:00 **Corresponding NOS Code** ELE/N4601 ELE/N9909	• To understand the method of monitoring, • measuring and reporting • To understand the Method of CSF, KPIs and Activity. • To understand the methods of SLA, timeliness, response and resolution data • To understand the problem management process flow, Determination resolution • To Understand the methods Problem management, tracking report and control measures • To understand the methods for learning new things at your work. • This will be Multiple question type. • Presenting their learnt knowledge	• Videos • Powerpoint • Laptop • Projector • Projector Screen White Board
8	**Final Assessment** **Theory Duration** (hh:mm) 15:00 **Practical Duration** (hh:mm) 23:00 **Corresponding NOS Code** ELE/N4601 ELE/N4602 ELE/N4603 ELE/N9909	• There will be two types of assessment ○ Multiple choice ○ Scenario based	•
	Total Duration **Theory Duration 120:00** **Practical Duration 180:00**	**Unique Equipment Required:** • Cable • Crimping Tool • Desktop • Digital Multimeter • Dot Matrix Printer • ESD Gloves • Ink Jet Printer • Insulation Tape • Lan Tester • Laptop • Lead Solder • Motherboard Diagnoser • Multi-Function Laser Printer • Network Switch • Post Cards • Router	

		• Scanner • Screw Driver Set • Soldering Flux • Soldering Iron

Grand Total Course Duration: **300 Hours 00 Minutes**

*(This syllabus/ curriculum has been approved **Electronics Sector Skills Council of India***

Annexure A: TRAINER Pre-Requisites

Trainer Prerequisites for Job role: "Field Technician - Computing and Peripherals" mapped to Qualification Pack: "ELE/ Q4601 Version1.0"

Sr. No.	Area	Details
1	**Job Description**	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack "ELE/Q4601 **version 1.0**".
2	**Personal Attributes**	Aptitude for conducting training, and pre/ post work to ensure competent, employable candidates at the end of the training. Strong communication skills, interpersonal skills, ability to work as part of a team; a passion for Earn and keep oneself updated with the latest in the mentioned field quality and for developing others; well-organised and focused, eager to le.
3	**Minimum Educational Qualifications**	12th Standard Pass with 2 Years Industry Experience.
4a	**Domain Certification**	Certified for Job Role: "Field Technician – Computing & Peripherals" mapped to QP: "ELE 4601 ". Minimum accepted score 70 %
4b	**Platform Certification**	Recommended that the Trainer is certified for the Job Role: "Trainer", mapped to the Qualification Pack: "SSC/1402". Minimum accepted score =70%
5	**Experience**	2 year of relevant Industrial and Trainer Exp.

Annexure B: ASSESSMENT Criteria

Assessment Criteria for Field Technician - Computing and Peripherals	
Job Role	**Field Technician - Computingand Peripherals**
Qualification Pack	**ELE/ Q4601 version1.0**
Sector Skill Council	**Electronic**

Sr. No.	Guidelines for Assessment
1	Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2	The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3	Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training centre(as per assessment criteria below)
4	Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training canter based on this criteria
5	To pass the Qualification Pack, every trainee should score a minimum of 70% in each NOS
6	In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.

				Marks Allocation	
Element	**Performance Criteria**	**Total Marks (400)**	**Out Of**	**Theory**	**Skills Practical**
1. ELE/N4601 Engage with customers	PC1. call the customer based on inputs logged into customer care	**100**	3	1	2
	PC2. greet the customer and listen to their problem attentively		3	1	2
	PC3. check with customer about time for visit, field work and confirm location		4	2	2
	PC4. follow etiquette when interacting with customers as per company policy such as politeness and patience		6	2	4
	PC5. seek feedback from the customers on completion of work		4	2	2
	PC6. understand location requirement for placement of system during and after installation		2	1	1
	PC7. seek inputs to understand symptoms for the problem faced		4	2	2

	PC8. ask open and close-ended questions to understand the specific problem		4	2	2
	PC9. inform customer about the replacement or repair process		4	2	2
	PC10. enquire about warranty coverage		3	1	2
	PC11. educate about other useful products and annual maintenance contract		3	1	2
	PC12. summarise the problem to customer and suggest the possible solutions		5	2	3
	PC13. inform customers on whether the module has to be replaced or repaired with reasons		5	2	3
	PC14. explain the customers on time taken, repair process and possible cost for the service or inclusion under warranty		5	2	3
	PC15. seek customer's approval for further service		5	2	3
	PC16. provide note to customers about the problem(s), actions taken and the cost associated and retain a copy		5	2	3
	PC17. provide appropriate invoice for any purchase of module or parts by customer		5	2	3
	PC18. interact with customer on time within the specified Service Level Agreement (SLA) time		3	1	2
	PC19. identify the customer's requirement and identify the resources and record		3	1	2
	PC20. accurately assess the problem and suggest appropriate solutions		3	1	2
	PC21. offer the right service as per customer's requirements		3	1	2
	PC22. communicate problem effectively in order to secure customer's confidence		4	2	2
	PC23. gauge customer satisfaction with the installation and placement of device		4	2	2
	PC24. maintain no repeat or second escalation from customer		4	1	3
	PC25. achieve customer satisfaction on engagement behaviour such as listening to complaints or appropriate dressing		3	1	2
	PC26. achieve 100% customer satisfaction and positive feedback		3	1	2
		TOTAL	**100**	**40**	**60**
2. ELE/N4602 Install, configure and setup hardware	PC1. check site conditions	**100**	1	0	1
	PC2. check and ensure any tailor-made programs required by the customer		1	0	1
	PC3. open the packaging of new product and take out the hardware carefully		1	0	1
	PC4. connect all the hardware devices such as CPU, Monitor, Keyboard, Mouse, as per the specifications of the system		2	1	1
	PC5. in case of laptop, connect battery, plug in and switch on the system		2	1	1
	PC6. follow standard operating procedure while handling		2	1	1

system	hardware modules such as handling PCB with ESD standards			
	PC7. follow the standard operating procedure for installation of each model of hardware devices and comply with them	2	1	1
	PC8. place the system at a location as preferred by customer	2	1	1
	PC9. install the hardware / devices as per standard operating procedure	2	1	1
	PC10. ensure that appropriate device and model specific procedure is followed as per installation manual	2	1	1
	PC11. maintain zero-material defect during material handling by following standard operating procedure	2	1	1
	PC12. carry tools and manuals as per installation manual	1	0	1
	PC13. understand the peripheral requirements of customers and ensure all hardware are available	3	1	2
	PC14. understand the placement requirement of peripheral equipment such as printers, modems, etc., as per customer preferences	3	1	2
	PC15. connect the peripheral devices with the system as per the standard procedure followed for each equipment	4	2	2
	PC16. install the peripherals, connect the appropriate peripheral such as printer, scanner to the system and run the installed program for set up	4	2	2
	PC17. follow the safety procedures while handling and installing the equipment	4	2	2
	PC18. install and configure peripherals as standard operating procedure	4	2	2
	PC19. ensure the placement of peripherals are as per customer requirement	3	1	2
	PC20. install the operating system and appropriate application software as per customer preference	5	2	3
	PC21. install additional software as per standard customer requirement	5	2	3
	PC23. switch on the system and peripherals and check for effective functioning	2	1	1
	PC24. check and ensure the functionality of system, peripherals and applications	3	1	2
	PC25. ensure product functions are tested and demo given to the customer after hardware, software, operating system and peripheral integration with reference to the installation manual	3	1	2
	PC26. ensure that customer is satisfied	2	1	1
	PC27. measure and meet multipart calls norm against benchmark	2	1	1
	PC28. complete the installation within the agreed Turn Around Time (TAT)	3	1	2
	PC29. complete the call closure in single visit	3	1	2
	PC30. complete the task with the quality benchmark of the	2	1	1

	company				
	PC31. understand the customer requirement and queries on the hardware		2	1	1
	PC32. educate customer on use of and procedures to be followed in operation of hardware		1	0	1
	PC33. inform customer about warranty and other terms and conditions on the hardware devices		1	0	1
	PC34. inform about cost estimates for any other new installations		2	1	1
	PC35. provide adequate information about the hardware devices, operating procedure, maintenance, etc., to the customer		1	0	1
	PC36. address the queries and issues raised by the customer on device		1	0	1
	PC37. inform customers clearly about warranty, and product terms and conditions		1	0	1
	PC38. provide customers on all the appropriate documents including invoice		1	0	1
	PC39. understand the work requirement from superior, periodically		1	0	1
	PC40. report to superior on the work completed		1	0	1
	PC41. escalate the customer issues and problems that cannot be handled at field level		2	1	1
	PC42. document the work completed on the company ERP software for tracking and future references		1	0	1
	PC43. achieve 100% on-time completion of field installation with reference to agreed target and time		3	2	1
	PC44. submit feedback form on customer satisfaction level with respect to the product installation		3	2	1
	PC45. find solutions to customer complaints and queries unresolved in the field		2	1	1
	PC46. report work status and prepare documentation as per company standards		2	1	1
			100	**40**	**60**
3. ELE/N4603 Troubleshoot and replace faulty module	PC1. listen carefully to concerns registered by customer at customer care	**100**	3	1	2
	PC2. interact with customer on telephone for better understanding of concern before the visit		3	1	2
	PC3. commence field trip based on type of complaint		2	1	1
	PC4. carry the troubleshooting instructions sheets		3	1	2
	PC5. understand the warranty, terms and conditions with relation to the product		3	1	2
	PC6. identify the type of problem and carry relevant tools and euipment based customer complaint and standard operating procedure		3	1	2

	PC7. assess whether replacement or repair of module may be required		3	1	2
	PC8. carry only 100% approved and verified field replacable parts for repairing or replacing		2	1	1
	PC9. decide on whether it can be repaired in field or at company's test centre		3	1	2
	PC10. understand the problems experienced by the customer		2	1	1
	PC11. use equipment such as 'power on self test' (POST) card to identify the common errors and issues in the system which does not start up		3	1	2
	PC12. conduct root-cause analysis and identify the likely problem area		3	1	2
	PC13. disassemble and check each part of computing system such as SMPS, Memory, Hard disk to isolate the failed module		3	1	2
	PC14. follow standard operating procedure while handling hardware modules such as handling PCB with ESD standards		3	1	2
	PC15. in case of peripherals, check all parts such as print head, lens, led display to isolate faulty module		3	1	2
	PC16. make decision on whether the part can be replaced or component should be repaired		3	1	2
	PC17. identify the solution design where the module to be replaced or software to be installed or updated		3	1	2
	PC18. decide on whether to replace module or send to repair centre		2	1	1
	PC19. if the module has to be replaced, disassemble the system, remove and replace and re-assemble the system		2	1	1
	PC20. if soldering needs to be done, use manual hand soldering iron unit to solder the components or parts		3	1	2
	PC21. if there is any operating system error, software related issues, reinstal the software or fixing the issues		3	1	2
	PC22. fix the common problems faced with peripherals and networking devices		3	1	2
	PC23. escalate the problems which cannot be addressed at field level to the superior for servicing at company's repair stations		2	1	1
	PC24. coordinate with remote technical helpdesk to seek any assistance on field		2	1	1
	PC25. follow appropriate safety procedures while handling tools such as soldering iron		3	2	1
	PC26. test 100% products or functions are tested after new hardware modules or software is installed		2	1	1
	PC27. understand clearly the requirement before field visit		2	1	1
	PC28. report percentage of call closure in multiple visits against benchmark		1	1	0
	PC29. ensure no sub-standard or unverified parts are used in replacing		2	1	1

	PC30. complete the function within the agreed Turn Around Time (TAT)		2	1	1
	PC31. complete the call closure in single visit		1	1	0
	PC32. complete the task with the quality benchmark of the company		1	1	0
	PC33. meet monthly or daily target given		1	1	0
	PC34. inform customer about the problem, action to be taken		1	0	1
	PC35. inform customer on adequate information about hardware device or software		2	1	1
	PC36. instruct customer on use of and procedures to be followed for operating the system or hardware		2	1	1
	PC37. confirm acceptance before replacing module or sending for repairs to company		1	1	0
	PC38. inform customer about warranty and other terms and conditions on the replaced or repaired hardware devices		2	1	1
	PC39. provide relevant documents to customers on completion of work		1	0	1
	PC40. achieve 100% satisfaction with customer on post sales service		1	0	1
	PC41. receive the work order from the superior or customer care about the complaint registered		2	1	1
	PC42. report on the work load and completion status		1	0	1
	PC43. find solutions to customer complaints and queries that are unresolved in the field		2	1	1
	PC44. escalate the problems that cannot be resolved at field level with reason		1	0	1
	PC45. report 100% on time completion of field repair or hardware replacement with reference to agreed target and time or reasons for not meeting target		1	0	1
	PC46. submit the feedback form on customer satisfaction level with respect to the product repair		1	0	1
	PC47. accurately report work status through proper documentation as per company's standards		1	0	1
	PC48. create knowledge bank on the complex repairs made through documentation		1	0	1
		TOTAL	**100**	**40**	**60**
4. ELE/N9909 Coordinate with colleagues	PC1. understand and assess work requirements	**100**	5	2	3
	PC2. understand the targets and incentives		5	2	3
	PC3. understand new operating procedures and constraints		5	2	3
	PC4. report problems in the field		5	2	3
	PC5. resolve personnel issues		5	2	3
	PC6. receive feedback on work standards and customer satisfaction		5	2	3
	PC7. communicate any potential hazards at a particular		5	2	3

	location				
	PC8. meet given targets		5	2	3
	PC9. deliver work of expected quality despite constraints		5	2	3
	PC10. receive positive feedback on behaviour and attitude shown during interaction		5	2	3
	PC11. interact with colleagues from different functions and understand the nature of their work		10	4	6
	PC12. receive spares from tool room or stores; deposit faulty modules and tools to stores		10	4	6
	PC13. pass on customer complaints to colleagues in a respective geographical area		10	4	6
	PC14. assist colleagues with resolving field problemsresolve conflicts and achieve smooth workflow		10	4	6
	PC15. follow the company policy during cross functional interaction		10	4	6
		TOTAL	**100**	**40**	**60**