**Course: Advance Diploma in Hardware ,Networking and Information Security**

* Course Id :
* Candidate Eligibility: 10+2, 10+ITI / Graduate
* No. Of NOS (If QP) : **NA**
* NSQF Level : **5**
* Cost Category : **1**
* Course Duration 12 Months
  + Theory duration : **620 hrs**
  + Practical duration : **600 hrs**
  + OJT duration : **0**

**Trainer Qualification Work Experience**

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| **Trainer Qualification** | **Work Experience** |
| **Essential Qualification:** | Atleast 1 year teaching experience in relevant field. |
| B.E/B.Tech (CS/IT/EC)/MCA |  |
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**CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE**

**Name and address of submitting body:**

National Institute of Electronics & Information Technology, Patna

Near IIT Patna, Amhara, Bihta, Patna - 801106

**Name and contact details of individual dealing with the submission**

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| **Name** | : | Manoj Kumar |
| **Position in the organization** | : | Joint Director |
| **Tel number(s)** | : | 0612-2219134 |
| **Mobile** | : | 9631862823 |
| **E-mail address** | : | mkumar@nielit.gov.in |

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| **Qualification Title** | **Advance Diploma in Hardware ,Networking and Information Security** |
| **Qualification Code** |  |
| **Nature and purpose of the qualification** | **Nature: Advance Diploma Course**  **Purpose:** Qualified learners will be able to be employed as   * System Administrator * Network Administrator * Systems support * Technical support * Server Administrator |
| **Body/bodies which will award the qualification** | National Institute of Electronics & Information Technology (NIELIT)  Near IIT Patna, Amhara, Bihta, Patna (Bihar)-801106 |
| **Body which will accredit providers to offer courses leading to the qualification** | National Institute of Electronics & Information Technology (NIELIT)  Near IIT Patna, Amhara, Bihta, Patna (Bihar)-801106 |
| **Body/bodies which will carry out assessment of learners** | Examination Cell,  National Institute of Electronics & Information Technology (NIELIT), Near IIT Patna, Amhara, Bihta, Patna (Bihar)-801106 |
| **Occupation(s) to which the qualification gives access** | **System Administrator, Network Administrator, Systems support, Technical support, Server Administrator** |
| **Licensing requirements** | **Not Applicable** |
| **Level of the qualification in the NSQF** | **5** |
| **Anticipated volume of training/learning required to complete the qualification** | **120** |
| **Entry requirements and / or recommendations** | 10+2, 10+ITI / Graduate  **.**  **Age 18 years to 35 years** |
| **Progression from the qualification** | **Network Administrator –IT Manager- IT Project Manager**  Initially, candidate can work as Network Administrator/System Administrator, who would be to capable of implementing, administering, maintaining LAN /WAN Networks and overall Security Systems. The candidate would be in position to plan , design and implement the LAN as well as Windows /Linux Network services in any organization |
| **Planned arrangements for the Recognition of Prior learning (RPL)** | * Presently only candidates who undergo training shall be assessed.   It will be incorporated once RPL strategy is finalized |
| **International comparability where known** | **N/A**  **CNC** |
| **Date of planned review of the qualification.** | **N/A** |

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| **Formal structure of the qualification** | | |  |  |
|  | **Title of unit or other component**  (include any identification code used) | **Mandator**  **y/**  **Optional** | **Estim ated size**  **(learni ng hours)** | **Level** |
| ADHNS I | PC & PERIPHERAL ARCHITECTURE (ADHNS I) | Mandatory | 120 | 5 |
| ADHNS II | OPERATING SYSTEM & DIAGNOSTIC UTILITIES (ADHNS II) | Mandatory | 120 |
| ADHNS III | BASIC NETWORK (ADHNS III) | Mandatory | 120 |
| ADHNS IV | NETWORKING THROUGH WINDOWS-2012 (ADHNS IV) | Mandatory | 120 |
| ADHNS V | PROGRAMMING TOOLS AND TECHNIQUES (ADHNS V) | Mandatory | 120 |
| ADHNS VI | NETWORKING THROUGH LINUX (ADHNS VI) | Mandatory | 120 |
| ADHNS VII | CLOUD COMPUTING (ADHNS VII) | Mandatory | 120 |
| ADHNS VIII | ADVANCE NETWORKING (ADHNS VIII) | Mandatory | 120 |
| ADHNS IX | WIRELESS NETWORK (ADHNS IX) | Mandatory | 120 |
| ADHNS X | INFORMATION SECURITY (ADHNS X) | Mandatory | 120 |
| ADHNS XI | ENHANCING COMMUNICATION & SOFT SKILL (ADHNS XI) | Mandatory | 20 |

**ASSESSMENT**

**Body/Bodies which will carry out assessment:**

Examination cell - National Institute of Electronics & Information Technology, Patna

**How will RPL assessment be managed and who will carry it out?**

*YES. Learners who have met the requirements of any Unit Standard that forms part of this qualification may apply for recognition of prior learning to the relevant Education body. The applicant must be assessed against the specific outcomes and with the assessment criteria for the relevant Unit Standards.*

**Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, reliable and fair and show that these are in line with the requirements of the NSQF.**

**1. ASSESSMENT GUIDELINE:**

The emphasis is on practical demonstration of skills & knowledge based on the performance criteria. Each OUTCOME is assessed and marked separately. Student is required to pass in all OUTCOMEs individually and marks are allotted. Following assessment methodologies are used.

1. Written Assessment (Multiple Choice Questions)
2. Practical Assessment
3. Viva Voce Assessment

The assessment results are backed by following evidences.

1. The assessor collects a copy of the attendance for the training done under the scheme. The attendance sheets are signed and stamped by the in charge / Head of the Training Centre.
2. The assessor verifies the authenticity of the candidate by checking the photo ID card issued by the institute as well as any one Photo ID card issued by the Central Government. The same is mentioned in the attendance sheet.
3. The assessor assigns roll number.

The assessor takes photograph of all the students along with the assessor standing in the middle and with the centre name/banner at the back as evidence.

**2. ASSESSORS:**

NIELIT Patna faculty teaching the course, also assesses the students as per guidelines set by Examination cell of NIELIT Patna.

**3. ELIGIBILITY TO APPEAR IN THE EXAM:**

Minimum 75% attendance is compulsory for the students to appear for the assessments.

**4. MARKING SCHEME:**

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| --- | --- | --- | --- | --- | --- |
| **Assessable Outcomes** | **Assessment criteria for the outcome** | **Total Mark** | **Written** | **Practical** | **Vivovoce** |
| **Module1:**  To Familiarize With  PC & Peripheral  Architecture | Learn fundamental of Computer, Basic Electronics and Components | 200 | 35 | 20 | 8 |
| Identify components like Diodes and Transistors, Measuring Instruments | 30 | 25 | 6 |
| Follow different concepts of Digital and Integrated Circuits, Power  Supplies and practical implementation |  | 20 | 20 | 6 |
| Architecture of PC Peripherals | 15 | 10 | 5 |
|  | **Total** | **100** | **75** | **25** |
| **Module2:**  Understand Basic  Concept of Operating  System & Diagnostic  Utilities | Follow Concepts of BIOS, POST &  DOS Batch Files, Discovering Windows 7/ 8 | 200 | 50 | 40 | 15 |
| Maintain Backup Procedure & Disaster Prevention | 25 | 15 | 5 |
| Apply General Troubleshooting And Maintenace | 25 | 20 | 5 |
|  |  | **Total** | 100 | 75 | 25 |

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| **Module3:**  Develop Concept of  Basic Network | Identify components of Networks,  Media and Connectors, Networking Devices | 200 | 30 | 25 | 9 |
| Concept of Network Model | 60 | 40 | 13 |
| Use of Internet and its Service  Providers |  | 10 | 10 | 3 |
|  | **Total** | 100 | 75 | 25 |
| **Module4:**  Explain Concepts of  Networking Through  Windows 2012 | Concepts of Windows 2012 Serve ,  Managing File System and Security Resources, Accessing Files and Folders: Managing file and folder  attributes | 200 | 30 | 25 | 6 |
| Creating Users and Groups, Configuring network services and access, Configure VPN and routing, Web Server Management with IIS | 33 | 20 | 4 |
| Install and Manage Active Directory,  Configure domain account policies,  Configure and manage Group Policy, Auditing and Security, Deploy, manage, and maintain servers | 27 | 30 | 11 |
|  | **Total** | **100** | **75** | **25** |
| **Module5:**  Demonstrate  Knowledge of  Programming Tools  And Techniques | Learn Basics of C Language and  HTML | 200 | 50 | 35 | 13 |
| Learn JAVA Programming and PHP Programming and practical implementation of it. |  | 50 | 40 | 12 |
|  | **Total** | **100** | **75** | **25** |
| **Module6:**  Developing Concept of Networking Through Linux | Follow Concept of CentOS Linux ,  Installing CentOS Server, Using the  Command Line, System Administration | 200 | 25 | 25 | 10 |
| System Management, Configuring Server for Security, Configuring a Network Connection and Introduction to Cryptography, Creating CentOS Server as a File Server, | 45 | 25 | 10 |
| Setting of Web server, Squid Proxy,  Server and securing Web Services, Setting Up the Firewall with ip tables,  Setting Up the Mail Server | 30 | 25 | 5 |
|  | **Total** | **100** | **75** | **25** |
| **Module7:**  Develop Concept of  Cloud Computing | Follow Concept of Cloud Computing,  Virtualization, Building Cloud  Networks and practical implementation | **200** | 75 | 50 | 15 |
|  | Identify Private , Public & Hybrid  Clouds and Setting up your own Cloud |  | 25 | 25 | 10 |
|  | **Total** | **100** | **75** | **25** |

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| **Module8:**  Develop Advance  Concept of  Networking | Explain Internetworking Basics, IP  Sub netting and (VLSM), Understand  Router User Interface and CommandLine Interface, Routing Basics and  Switching Basics | **200** | 50 | 40 | 10 |
| Learn Concept of VLAN , Components of a Router, Managing Traffic with Access Control Lists, Understand  Network Address Translation and  WAN Protocols | 50 | 35 | 15 |
|  | **Total** | **100** | **75** | **25** |
| **Module9:**  Explain Concepts of  Wireless Network | Follow Concepts of Wireless  Network, Characteristics of Wireless  Medium, Understand Physical Layer  Alternatives for Wireless Networks, | **200** | 40 | 25 | 10 |
| Follow Network Planning, Acquire  Knowledge of Wireless LAN, GSM,  TDMA Technology and CDMA  Technology, | 40 | 35 | 10 |
| Use Mobile Data Networks, Bluetooth  Technology, Overview of Wireless Broadband Networking | 20 | 15 | 5 |
|  | **Total** | **100** | **75** | **25** |
| **Module10:**  Learn and practice  Information Security | Operate and test Information Security,  Cryptography, Intruders, Virus and  Firewalls, Protocols weaknesses in  TCP/IP and other protocols | **200** | 40 | 30 | 10 |
| Manage Ethical Hacking, Scanning and Enumeration, Trojans, Backdoors, Viruses, and Worms | 30 | 20 | 5 |
| Execute Sniffing, Web Application  Vulnerabilities, OS Hardening Understand Network infrastructure  security | 30 | 25 | 10 |
|  | **Total** | **100** | **75** | **25** |
| **Module11:**  Enhancing  Communication &  Soft Skill | Develop Communication Skill | **50** | 10 | N/A | N/A |
| Managing career, staff and professional relationships | 20 | N/A | N/A |
| Ready for interview | 20 | N/A | N/A |
|  |  | **Total** | **50** | N/A | N/A |
|  | **Grand Total** | **2050** | **1050** | **750** | **250** |

**5. PASSING MARKS:**

Passing criteria is based on marks obtain in attendance record, term works , assignments, practical’s performance, viva or oral exam, module test, class test, practical exam and final exam

Minimum Marks to pass practical exam – 50%

Minimum Marks to pass theory exam – 35%

Grade Equivalents:-

>85% S

>75% & <85% A

>65% & <75% B

>50% & <65% C

>35% & <50% D

**6. RESULTS AND CERTIFICATION:**

The assessment results are backed by evidences collected by assessors. Successful trainees are awarded the certificates by NIELIT, Patna.