

**SYLLABUS FOR THE TRADE  
OF**

**COMPUTER OPERATOR AND PROGRAMMING ASSISTANT  
(SEMESTER PATTERN)**

**UNDER  
CRAFTSMAN TRAINING SCHEME**

*Designed in : 2013*

*by*

Government. of India  
CENTRAL STAFF TRAINING AND RESEARCH INSTITUTE  
Directorate General of Employment & Training  
Ministry of Labour & Employment  
EN 81, SECTOR – V, SALT LAKE CITY,  
Kolkata – 700 091.

List of trade committee members approved the syllabus of semester system for the trade of “COPA ” held on 10<sup>th</sup> January 2012 at Kubernagar ITI, Ahmedabad, Gujarat

<b>Sr.No.</b>	<b>Name</b>	<b>Designation</b>	<b>Status</b>
1	Shri Nikhilbhai Patel	Chairman, IMC ITI Kubernagar	Chairman
2	Shri S.A.Pandav	Joint Director, Employment & Training, Gandhinagar	Member
3	Shri K.N.Somashekaraiah	Principal, RVTI, Bengalore	Co-ordinator
4	Shri Hemant Singh	Training Officer	Member
5	Shri Sanjay Kumar Gupta	V.I (COPA)	Member
6	Shri Amit Shah	Principal system analyst	Member
7	Shri Samir Motwani	V P Operations	Member
8	Shri P.B.Vyas	Principal Calss-II	Member
9	Shri G.K.Wadhwa	Asst. Manager IT	Member
10	Shri H.D.Solanki	Group Instructor, COPA	Member
11	Smt. B.R.Naik	Group Instructor, COPA	Member
12	Shri M.N.Parmar	Group Instructor	Member
13	Shri P.A.Mistry	Principal, ITI Kubernagar, Ahmedabad	Member Secretary

**List of members attended the Workshop to finalize the syllabi of existing CTS into Semester Pattern held from 6<sup>th</sup> to 10<sup>th</sup> May'2013 at CSTARI, Kolkata.**

Sl. No.	Name & Designation	Organisation	Remarks
1.	R.N. Bandyopadhyaya, Director	CSTARI, Kolkata-91	Chairman
2.	K. L. Kuli, Joint Director of Training	CSTARI, Kolkata-91	Member
3.	K. Srinivasa Rao, Joint Director of Training	CSTARI, Kolkata-91	Member
4.	L.K. Mukherjee, Deputy Director of Training	CSTARI, Kolkata-91	Member
5.	Ashoke Rarhi, Deputy Director of Training	ATI-EPI, Dehradun	Member
6.	N. Nath, Assistant Director of Training	CSTARI, Kolkata-91	Member
7.	S. Srinivasu, Assistant Director of Training	ATI-EPI, Hyderabad-13	Member
8.	Sharanappa, Assistant Director of Training	ATI-EPI, Hyderabad-13	Member
9.	Ramakrishne Gowda, Assistant Director of Training	FTI, Bangalore	Member
10.	Goutam Das Modak, Assistant Director of Trg./Principal	RVTI, Kolkata-91	Member
11.	Venketesh. Ch. , Principal	Govt. ITI, Dollygunj, Andaman & Nicobar Island	Member
12.	A.K. Ghate, Training Officer	ATI, Mumbai	Member
13.	V.B. Zumbre, Training Officer	ATI, Mumbai	Member
14.	P.M. Radhakrishna pillai, Training Officer	CTI, Chennai-32	Member
15.	A.Jayaraman, Training officer	CTI Chennai-32,	Member
16.	S. Bandyopadhyay, Training Officer	ATI, Kanpur	Member
17.	Suriya Kumari .K , Training Officer	RVTI, Kolkata-91	Member
18.	R.K. Bhattacharyya, Training Officer	RVTI, Trivandrum	Member
19.	Vijay Kumar, Training Officer	ATI, Ludhiana	Member
20.	Anil Kumar, Training Officer	ATI, Ludhiana	Member
21.	Sunil M.K. Training Officer	ATI, Kolkata	Member
22.	Devender, Training Officer	ATI, Kolkata	Member
23.	R. N. Manna, Training Officer	CSTARI, Kolkata-91	Member
24.	Mrs. S. Das, Training Officer	CSTARI, Kolkata-91	Member
25.	Jyoti Balwani, Training Officer	RVTI, Kolkata-91	Member
26.	Pragna H. Ravat, Training Officer	RVTI, Kolkata-91	Member
27.	Sarbojit Neogi, Vocational Instructor	RVTI, Kolkata-91	Member
28.	Nilotpall Saha, Vocational Instructor	I.T.I., Berhampore, Murshidabad, (W.B.)	Member
29.	Vijay Kumar, Data Entry Operator	RVTI, Kolkata-91	Member

## GENERAL INFORMATION

- 1. Name of the Trade** : **COMPUTER OPERATOR AND PROGRAMMING ASSISTANT**
- 2. N.C.O. Code No.** :
- 3. Duration of Craftsmen Training** : 1 year (Two Semesters )
- 4. Power norms** : 3.45 KW
- 5. Space norms** : 70 Sq. mt.
- 6. Entry Qualification** : Passed 10<sup>th</sup> class examination
- 7. Unit strength** : 20 Trainees
- 8. Instructors Qualification** : Passed MCA/ B-TECH/BE in Computer Science/ Engineering/ Technology from recognized university with 1year working experience in the relevant field. OR
- Passed 3 years Diploma in Computer Science / Engineering / Technology from recognized board or institution with 2 years working experience in the relevant field. OR
- Passed BCA/BSc Computer Science/ DOEACC A Level from recognized university with 2 years working experience in the relevant field. OR
- NAC or NTC holder in relevant trades with three years Experience
- 9. Desirable qualification** : Preference to be given CIC (Craft instructor Certificate) holders.

At least one Instructor must have Degree / Diploma in relevant field

**Syllabus for the Trade of “COMPUTER OPERATOR AND PROGRAMMING ASSISTANT” Under C.T.S.**

Duration : Six Months

First Semester

Semester Code : COP : SEM I

<b>Week</b>	<b>Trade Practical</b>	<b>Trade Theory</b>
1	Using WINDOWS <ul style="list-style-type: none"><li><input type="checkbox"/> Start windows</li><li><input type="checkbox"/> Using different windows simultaneously</li><li><input type="checkbox"/> Moving through widows and mouse</li><li><input type="checkbox"/> Maximum/Minimum windows</li><li><input type="checkbox"/> Use of help feature</li><li><input type="checkbox"/> Exit windows</li><li><input type="checkbox"/> Starting an application</li><li><input type="checkbox"/> Run and Manage multiple application</li><li><input type="checkbox"/> Close applications Using the program Manager</li><li><input type="checkbox"/> Create/Add Groups using Program Manager</li><li><input type="checkbox"/> Move/Copy/Delete Program Items.</li><li><input type="checkbox"/> Change Programmed/their properties</li><li><input type="checkbox"/> Expand compressed directories and files</li><li><input type="checkbox"/> Multiple Windows</li></ul>	History of Computer <ul style="list-style-type: none"><li><input type="checkbox"/> Abacus of ENIAC, Computer Generations, Languages, Software and application, Computers in India.</li><li>Computers - An Introduction</li><li><input type="checkbox"/> Functions of Computer: input, processing, output, Functions of ALU, control, storage, input and output devices.</li><li><input type="checkbox"/> Application of Computers: viz. Railway Reservation, Electricity / Telephone Billing and (include some e-governance applications according to respective States.)</li><li><input type="checkbox"/> Networks of Computers- Homogenous, Heterogeneous Characteristics (State Wide Area Network (SWAN) concept)</li><li><input type="checkbox"/> Clock Speed</li><li><input type="checkbox"/> Accuracy</li></ul>
2-3	Using the program Manager <ul style="list-style-type: none"><li><input type="checkbox"/> Create/Add Groups using Program Manager</li><li><input type="checkbox"/> Move/Copy/Delete Program Items.</li><li><input type="checkbox"/> Change Programmed/their properties</li><li><input type="checkbox"/> Expand compressed directories and files</li><li><input type="checkbox"/> Multiple Windows</li></ul> Using Desktop ICONS <ul style="list-style-type: none"><li><input type="checkbox"/> My Computer</li><li><input type="checkbox"/> Network Neighborhood</li><li><input type="checkbox"/> Control Panel</li><li><input type="checkbox"/> Add Printer</li><li><input type="checkbox"/> Create/Delete/Rename/Folder</li></ul> File Management through Windows <ul style="list-style-type: none"><li><input type="checkbox"/> Select File snag Directories</li><li><input type="checkbox"/> Copy, Move, Delete, Files/Directories</li><li><input type="checkbox"/> Disk Operations using File Manage</li></ul>	Functions <ul style="list-style-type: none"><li><input type="checkbox"/> Bits, bytes characters, field record, file.</li></ul> Representation of data: <ul style="list-style-type: none"><li><input type="checkbox"/> Binary addition and subtraction, octal, hexadecimal, ASCII, EBCDIC, positive versus negative integers, floating point numbers.</li><li><input type="checkbox"/> Higher level and Lower language.</li></ul>

	<p>Using Essential Accessories</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Starting and Using Text Editors</li> <li><input type="checkbox"/> Type and Edit text in a document in Text Editors 9</li> <li><input type="checkbox"/> Save and Print a document file in Text Editors</li> <li><input type="checkbox"/> Starting and using paintbrush</li> <li><input type="checkbox"/> Printing a drawing</li> </ul>	
4	<p>Basic Shell Commands of LINUX</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Date, echo, who, is, cp, rm, mv, cd,</li> </ul>	<p>Computer Hardware; electronic digital computer.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Input device: on line data input devices &amp; their importance, dumb terminals, voice recognition devices, Touch tone terminals, Mouse.</li> <li><input type="checkbox"/> Office data input: key to disk system</li> </ul>
5	<ul style="list-style-type: none"> <li><input type="checkbox"/> Mk dir, rm dir, chmod, sort, grep, passwd, etc.</li> </ul>	<p>Source data input: point of sale terminals, laser beam scanners, optical sense readers, optical characters readers (OCR), and magnetic ink character readers (MICR).</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Output device: Hard copy device -Dot matrix printer, ink jet printer, laser printer, plotter output.</li> </ul>
6-7	<p>Designing web-pages( Static)</p>	<p>Soft copy device: VDU (monochrome color), LCD (liquid crystal display), audio response unit;</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> CPU architecture: Overview with data flow</li> <li><input type="checkbox"/> Memory device: Classification of Primary Memory Devices and Flash Memories.</li> <li><input type="checkbox"/> Secondary memory device; Hard disk (removable/fixed), advantage and limitations of secondary storage devices &amp; DVD Writers or Blu-ray Writers.</li> <li><input type="checkbox"/> Removable Drive like Pen drives and external storage devices.</li> <li><input type="checkbox"/> Serial, Parallel and USB Ports.</li> </ul>
8-9	<p>Setup the Internet Connection &amp; Sharing(Proxy Setup &amp;Leased Line Setup)</p>	<p>Internet connection setup &amp; sharing.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Protocols TCP/IP, ISP, NSP ETC.</li> </ul>
9	<p>Designing web-pages, Static &amp; Dynamic.</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Concept of sites &amp; pages</li> <li><input type="checkbox"/> Introduction to HTML, DHTML,XML,</li> </ul>
10-11	<p>Concepts of Web Hosting, Web server, Application server, Database Server</p>	<p>Information concepts and processing: Evolution of Information Processing, data information, language and Communication.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Definition of Information: difference between Data and Information.</li> <li><input type="checkbox"/> Data concepts: symbols which describe records reality: logical and physical</li> </ul>

		<p>concepts.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Logical concepts of data: Entities, Attributes and Relationship.</li> <li><input type="checkbox"/> Physical concepts: Storage and Retrieval of data; comparison of manual and computer storage and organization of data as files.</li> <li><input type="checkbox"/> Data processing: Storage, retrieval and processing of data as files.</li> <li><input type="checkbox"/> Data processing: Storage, retrieval and processing of data, provision of Information of relevance.</li> <li><input type="checkbox"/> Techniques/Methods of Data processing.</li> <li><input type="checkbox"/> Methods of Data Security like backup, online backup, restoration etc</li> </ul>
12-14	<p>Measuring Main Supply, Earth voltage &amp; checking earthing.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Precautionary measures in Handling /Operating. <ul style="list-style-type: none"> <li>- VCD, CD, HDD, FDD, DVD, SCANNER</li> <li>- Modem, Keyboard, Mouse, Hub, Monitor</li> </ul> </li> <li><input type="checkbox"/> Printers: Dot Matrix, Inkjet, Laser <ul style="list-style-type: none"> <li>- Feeding paper</li> <li>- Installing the cartridge</li> <li>- Refilling the cartridge.</li> </ul> </li> <li><input type="checkbox"/> Backup and Restore of DATA <ul style="list-style-type: none"> <li>- Scheduling</li> <li>- Management Plans etc.</li> </ul> </li> </ul>	<p>Flow Charts</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Illustrations with summing series, sorting, searching merging Analysis of algorithms-space and time tradeoffs. Program documentation, style in programming, program testing, low chart and Data flow Diagrams.</li> <li><input type="checkbox"/> Program testing and debugging efficient programming techniques Structured programming</li> </ul>
15-16	Basic C Programming	<p>Introduction to C</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Overview of C</li> <li><input type="checkbox"/> Constants, Variables, and Data type</li> <li><input type="checkbox"/> Operators and Expression</li> <li><input type="checkbox"/> Managing Formatted / Unformatted Input and Output</li> </ul>
17-18	<p>Programming On C on control structures(if-else, switch case, Loops etc.) Arrays</p>	<p>Decision making and Branching</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Decision Making looping</li> <li><input type="checkbox"/> Arrays</li> </ul>
19-21	<p>Programming On C on Strings, Functions</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Handling of Character Strings</li> <li><input type="checkbox"/> User defined Functions</li> </ul>
22-23	<p>Programming On C on Pointers, structures and unions</p>	<p>Structures and Unions</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Pointers</li> <li><input type="checkbox"/> File management in concepts</li> </ul>
24	Employability Skill	
25	Project work /Industrial Visit (optional)	
26	Examination	

**Syllabus for the Trade of “COMPUTER OPERATOR AND PROGRAMMING ASSISTANT” Under C.T.S.**Duration : Six Months

Second Semester

Semester Code : COP : SEM II

<b>Week</b>	<b>Trade Practical</b>	<b>Trade Theory</b>
1-2	Basics of Word processing <input type="checkbox"/> Text selection <input type="checkbox"/> Opening Documents and Creating Documents <input type="checkbox"/> Saving Documents/Quitting Documents <input type="checkbox"/> Cursor control <input type="checkbox"/> Programming on Creating Simple Applications in VB	Approaching ASP.NET starting with Visual Basic .NET Features of Visual Basic , Editions of Visual Basic, Visual Basic Terminology <input type="checkbox"/> Visual Basic Terminology, Working in the development environment <input type="checkbox"/> Event-Driven Programming <input type="checkbox"/> Creating a program in Visual Basic, project and executable files <input type="checkbox"/> Visual Basic Reference Materials
3-4	Printing Documents <input type="checkbox"/> Using the interface(Menu, toolbars) <input type="checkbox"/> Editing Text (Copy, delete, Move etc.) <input type="checkbox"/> Finding and replacing Text	Visual Basic.NET Fundamentals. Introduction to Objects <input type="checkbox"/> Controlling objects <input type="checkbox"/> Properties , Methods and Events <input type="checkbox"/> Working with Forms <input type="checkbox"/> Introduction to controls <input type="checkbox"/> Basic controls <input type="checkbox"/> Creating a Visual Basic Applications
5-6	<input type="checkbox"/> Practicing in Regional Language. Document Enhancement <input type="checkbox"/> Adding borders and shading, Headers and Footers Setting Up Multiple columns, Sorting blocks, margins and hyphenating documents  Programming on VB.Net	Working with Code and Forms <input type="checkbox"/> Automatic Code completion features <input type="checkbox"/> Interfacing with the user <input type="checkbox"/> Using the Message box Functions <input type="checkbox"/> Using the Input box functions <input type="checkbox"/> Working with code statements <input type="checkbox"/> Managing forms <input type="checkbox"/> Working with Forms
7-8	<input type="checkbox"/> Creating Master Document, Data source <input type="checkbox"/> Merging Documents <input type="checkbox"/> Using mail merge Feature for Labels and envelopes  Graphics and using Templates and Wizards Revision & Sessional Exam  Programming on VB.Net	Overview of variables <input type="checkbox"/> Declaring Variables <input type="checkbox"/> Variable scope <input type="checkbox"/> Using Arrays <input type="checkbox"/> User-Defined data types <input type="checkbox"/> converting data types <input type="checkbox"/> Using Constants <input type="checkbox"/> Working with Procedures <input type="checkbox"/> Working with dates and times <input type="checkbox"/> Using the Format function <input type="checkbox"/> Manipulating Text strings <input type="checkbox"/> Writing Procedures
9-10	Usage of Ms-Excel Worksheet Basics <input type="checkbox"/> Data Entry in cells, entry of numbers, text and Formulae	Comparison and Logical Operators <input type="checkbox"/> Using If....Then Statements <input type="checkbox"/> Using select...case statements <input type="checkbox"/> Overview of Looping structures



	<ul style="list-style-type: none"> <li><input type="checkbox"/> Moving data in a Worksheet</li> <li><input type="checkbox"/> Moving around in a Worksheet</li> <li><input type="checkbox"/> Selecting Data range</li> <li><input type="checkbox"/> Using the interface (Toolbars, Minus)</li> <li><input type="checkbox"/> Editing basics</li> <li><input type="checkbox"/> Working with workbooks</li> <li><input type="checkbox"/> Saving and quitting</li> <li><input type="checkbox"/> Cell Referencing</li> </ul> <p>Programming on VB.Net</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Using Do...Loop structures</li> <li><input type="checkbox"/> For...Next Statement</li> <li><input type="checkbox"/> Exiting a Loop</li> <li><input type="checkbox"/> Controlling Program Flow</li> </ul> <p>While, Do While, Else If loop, SWITCH Case</p>
11-12	<p>Calculations and Worksheets-Using Auto fill</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Working with formulae</li> <li><input type="checkbox"/> Efficient Data Display with Data formatting number formatting etc./</li> <li><input type="checkbox"/> Working with ranges</li> <li><input type="checkbox"/> Worksheets printing</li> </ul> <p>Programming on ASP.Net</p>	<p>Types of Errors</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Break Mode</li> <li><input type="checkbox"/> Using the Debug Toolbar</li> <li><input type="checkbox"/> Using the Watch Window</li> <li><input type="checkbox"/> Using the Immediate Window</li> <li><input type="checkbox"/> Using the locals window</li> <li><input type="checkbox"/> Tracing Program Flow with the call stack</li> <li><input type="checkbox"/> Using visual Basic debugging tools</li> </ul>
13	<p>Adding/Formatting Text data with Auto format</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Changing chart types</li> <li><input type="checkbox"/> Creating separate, chat sheet</li> <li><input type="checkbox"/> Adding titles, legends and gridlines</li> <li><input type="checkbox"/> Printing charts.</li> </ul> <p>Programming on ASP.Net</p>	<p>Types of controls</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Overview of Standard Controls</li> <li><input type="checkbox"/> Using combo box and list Box controls</li> <li><input type="checkbox"/> Using option button and Frame Control</li> </ul>
14	<p>Finding Records With Data form</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Adding/Deleting records.</li> <li><input type="checkbox"/> Filtering records in a worksheet</li> </ul> <p>Programming on ASP.Net</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> working with selected text</li> <li><input type="checkbox"/> Advanced Standard Controls</li> <li><input type="checkbox"/> Activex controls</li> <li><input type="checkbox"/> Insertable Objects</li> <li><input type="checkbox"/> Working with controls</li> <li><input type="checkbox"/> Login, Validation &amp; Navigation Control</li> </ul>
15	<p>Programming on ASP.Net</p>	<p>Overview of Activex Data objects</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Visual Basic data Access Features</li> <li><input type="checkbox"/> Relational Database concepts</li> <li><input type="checkbox"/> Using the ADO Data control to access data</li> <li><input type="checkbox"/> Structured Query Language (SQL)</li> <li><input type="checkbox"/> SQL connection</li> <li><input type="checkbox"/> Manipulated Data</li> <li><input type="checkbox"/> Using the Data Form Wizard</li> <li><input type="checkbox"/> Accessing Databases</li> <li><input type="checkbox"/> Back up &amp; Restore Procedure</li> </ul>
16	<p>Programming on ASP.Net</p>	<p>Field – Level Validation</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Using Text Box Properties to Restrict Data Entry</li> </ul>

		<input type="checkbox"/> Using the Masked Edit Control <input type="checkbox"/> Form-Level Validation <input type="checkbox"/> Form Events Used When Validating Data
17	Programming on ASP.Net	Overview of Run-Time Errors <input type="checkbox"/> Overview of the Error -0 Handling Process <input type="checkbox"/> The Err Object <input type="checkbox"/> Errors and the Calling Chain <input type="checkbox"/> Errors in an Error-Handling Routine Exception Handling <input type="checkbox"/> Inline Error Handling <input type="checkbox"/> Error – Handling Styles <input type="checkbox"/> General Error – Trapping Options in Visual Basic.NET <input type="checkbox"/> Error Trapping - Exception Handling
18	Programming on ASP.Net	Menus <input type="checkbox"/> Status Bars <input type="checkbox"/> Toolbars <input type="checkbox"/> Adding Menus - Hyperlink Drag-and-Drop Operations  <input type="checkbox"/> Overview of Drag-and-Drop Features <input type="checkbox"/> Mouse Events <input type="checkbox"/> Drag-and-Drop Editing Basics <input type="checkbox"/> Adding Drag and Drop
19-20	Programming on ASP.Net	Collections <input type="checkbox"/> Using Control Arrays  Finishing Touches <input type="checkbox"/> User Interface Design Principles <input type="checkbox"/> Distributing and Application <input type="checkbox"/> Creating a Default Project <input type="checkbox"/> Review: Steps to Creating a Visual Basic Program <input type="checkbox"/> Development Resources <input type="checkbox"/> Using the Package and Development Wizard - Web Services
21	Practice on My SQL Creating Tables, Inserting Data in a Table, Using simple query	X-base package (T-55, P-200) - using MySQL and MS-Access <input type="checkbox"/> What is Database Management System (RDBMS) and Relational Database Management System (RDBMS)
22	Practice on My SQL  Updation, Deletion query	<input type="checkbox"/> Introduction to SQL <input type="checkbox"/> What is SQL? <input type="checkbox"/> Data Definition Language (DDL) and Data Manipulation Language (DML)

23	Practice on MS Access Creating Table, From	Introduction to Atomic Concurrent Integrated Durable (ACID) Properties. <input type="checkbox"/> Expression o Select commands o Using Numeric, Concatenation operator, Date, Dual Table, null values
24	Practice on MS Access Query, Report	Awareness of IT –Act 2000, its Amendments and Phenomena (T-5) <input type="checkbox"/> Provisions of act <input type="checkbox"/> Types of offences, fines, imprisonment <input type="checkbox"/> Cyber Crime, Cyber Law <input type="checkbox"/> E-Commerce Basics (Overview of B2B, B2C, C2C), Online transactions
25	Revision	
26	Examination	

**TRADE: COMPUTER OPERATOR AND PROGRAMMING ASSISTANT**  
**LIST OF TOOLS & EQUIPMENT**

**A. TRAINEES TOOL KIT FOR 16 TRAINEES**

<b>SL. No.</b>	<b>Name of the items</b>	<b>Quantity</b>
1	Laptop : i3 2 <sup>nd</sup> generation processor or equivalent and above with major minimum features as below:- 1) Speed :- 2.1 GHz or Higher. 2)Cache Memory : - Minimum 3 MB or better. 3)RAM :- 4 GB DDR-III or Higher. 4)Hard Disk Drive :- 500GB or Higher,5400 rpm(minimum) or Higher, WiFi Connectivity. 5) Network Card : Integrated Gigabit Ethernet(10/100/1000). 6) Paper Licensed Operating System / OEM Pack(Preloaded). 7)Antivirus / Total Security – 01 NO.	1 No.
2	Server for LAN – As Required. Xeon Latest 64 bit processor or Higher with PCI Express Video Card 4GB VRAM 8 GB RAM 22" TFT Keyboard, Mouse, DVD OR BLU-RAY WRITER with latest license of OS - Server Edition Internet, Antivirus - Server Edition & UPS for Power Back up.	
3	WORKSTATION/NODES : 2 <sup>nd</sup> Generation Core i3 Processor or Equivalent and above with major minimum features as below : 1) 32/64 Bit Processor (3.06 GHz or Higher,4 MB 4-Core) or Higher. 2) Network Card : Integrated Gigabit Ethernet(10/100/1000). 3) RAM : 2 GB/ 4 GB DDR3 or Higher. 4) 320 GB / 500 GB HDD or Higher. 5) 19" TFT Monitor / Higher 6) DVD Writer 7) PS2 / USB KeyBoard , USB/Optical Mouse with latest Paper Licensed Operating System / OEM Pack(Preloaded) Professional/Ultimate Edition with Internet Facility.	10 Nos
4	WORKSTATION FOR MULTIMEDIA - 01 Nos. i700 (i7) PROCESSOR or Quad core or Higher 8 GB RAM 1 Terabyte HDD 22" TFT Monitor101 DVD OR BLU-RAY WRITER KEYBORD/INTERNET USB Optical Mouse, USB Keyboard with latest license of OS with Antivirus - Professional/Ultimate Edition	2 Nos
5	24 PORT SWITCH WITH WIRELESS CONNECTIVITY	As required
6	LAB should have Structured cabling	As required
7	Internet or Intranet Connectivity	As required

8	RJ 45 CONNECTORS	As required
9	CAT-6 CABLE FOR LAN	As required
	500 VA or higher off – line UPS FOR NODES	10 No's
10	COLOUR LASER PRINTER	1 No
11	Network MONOCHROME LASER PRINTER	1 No
12	OPTICAL SCANNER (DESK TOP TYPE)	1 No
13	WEB CAM (DIGITAL CAMERA)	
14	DVD OR BLU-RAY WRITER	2 Nos
15	Standalone HARD DISKS	4 Nos
16	LCD PROJECTOR	1 No
17	Network Rack	2 Nos
18	LAN Setup	As required
19	Data Recovery Software	As required
20	DSL Wireless Router	01 No
21	Wireless Router	01 No
<b>B. SOFTWARE</b>		
	<p>Software: OS, VISUAL STUDIO, Linux or any Open Source Software., Turbo C , JVM  Antivirus for - clients / workstations in profile with validity of a year or more that can be procured on expiry.  NOTE- LATEST VERSION OF HARDWARE AND SOFTWARE should be provided  NOTE:  ALL ABOVE WILL BE ACADEMIC VERSIONS EXCEPT FOR ANTIVIRUS</p>	
<b>C. LIST OF OTHER ITEMS/ FURNITURE</b>		
1	Vacuum cleaner	01 No
2	Pigeon hole cabinet : 20 compartments	01 No
3	Chair and table for the instructor - 01 each (for class room & laboratory)	
4	Dual Desk or Chair and Tables for Trainees	10 Nos
5	Computer table sunmica top 150X650X750 mm with sliding tray for key board and one shelf of storage	10 Nos
6	Operators chair (without arms mounted on castor wheels, adjustable height)	10 Nos
7	Wall clock	01 Nos
8	Printer table 650X500X750mm can be varied as per local specifications	03Nos
9	Window or Split type Air conditioners 1.5 tons	03Nos
10	Storage cabinet 60X700X450mm	01Nos
11	Inter active Board.	1 No.
12	2D Bar Code Reader	1 No.