Ref No: NIELIT/KOL/EOI/2019/02/450

Date: 26/09/2019

Last date: 17/01/2020

# **Expression of Interest**

for

# Engagement of Training Institute for Skilling Youths In and Around Six IT Parks in West Bengal for Digital Literacy, Diploma and Advance Diploma Courses

(Bolpur, Kharagpur, Asansol, Purulia, Barjora and Siliguri)

# Under

# National Institute of Electronics and Information Technology, Kolkata

Unit 1: Jadavpur University Campus, Kolkata-700032

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## NIELIT, Kolkata - Roles and Responsibilities

#### 1. Introduction:

NIELIT Kolkata invites Expression of Interest from eligible institutes for conducting Training Program in six districts (Birbhum, Paschim Medinipur, Paschim Bardhaman, Purulia, Bankura, Darjeeling) of West Bengal in and around six IT parks. i.e IT parks at Bolpur, Kharagpur, Asansol, Purulia, Barjora and Siliguri.

The training will be encouraged using the support from NIELIT accredited institutes, NIELIT recognized ESDM Training Partners, NIELIT facilitation center, WIL training partners and CSC s. The students should be present in NIELIT offices at IT parks during their selection, examination, special training program, workshop, carrier guidance program etc.

The objective of the initiative is to conduct the Training Program in and around six IT parks of West Bengal for unemployed youths to increase their skills in IT, Electronics and IT enabled services by extension of locational presence of NIELIT Kolkata.

## 2. Training Location

The NIELIT accredited institutes, ESDM Training Partners, WIL training partners can conduct the training in their center location and in any other suitable venue having adequate infrastructure within above six districts in and around six IT Parks. Such suitable venues identified by the institute should be complete in all respect like sufficient infrastructure, PC, faculty member/trainer, well connected by public transport, etc.

The NIELIT facilitation centers and CSC s can conduct the training only in their registered center location within these six districts.

Private institutes having good infrastructure and facilities may also apply but their applications will be considered if sufficient responses are not received from the above stated categories.

#### 3. Examination and Certification

- i. NIELIT Kolkata will conduct the skill evaluation examination as per practice.
- ii. Certificates will be issued to the successful candidates. All the successful candidates would be issued the Certificate and Grade card.
- iii. Any future changes if required will be implemented with intimation to the Institute. However the Institutes will implement such directives without raising any objection and without disturbing the future of the students.

#### 4. Courses to be conducted

All the courses are skill oriented and should be taught as per NIELIT syllabus and guidelines.

- A) The following Courses of 42 hours will be offered in different phases:
  - i. Certificate Course in Android Apps Development
  - ii. Certificate course in IoT using Python
  - iii. Certificate Course in Office Automation and Practices
  - iv. Certificate Course in Assembly & Maintenance of PC
  - v. Certificate Course in Desk Top Publishing
  - vi. Certificate Course in Soft Skill
  - vii. Certificate Course in Multimedia
  - viii. Certificate Course in Financial Accounting
  - ix. Certificate Course on Solar Technologies
  - x. Certificate Course in Basic Computer Operation
  - xi. Certificate Course in PC Hardware and Maintenance
  - xii. Foundation Course in Financial Accounting
  - xiii. Certificate course in Basic Repairing of Printer and Cartridges
  - xiv. Digital Marketing
- B) The following Courses of 150 hours will be offered in different phases:
  - i. Diploma in Computer Application
  - ii. Diploma in PC Hardware, Networking and Solar Technology
  - iii. Diploma in Multimedia Animation
- C) The following Courses of 175 hours will be offered in different phases:
  - i. Advance Diploma in Computer Application
  - ii. Advance Diploma in PC Hardware, Networking and Solar Technology
  - iii. Advance Diploma in Multimedia Animation
  - iv. Field Technician Air Condition & Refrigerator
  - v. Field Smartphone Repair Technician

The details of the courses are given in Annexure - I. Depending on response and acceptability the number of courses will be increased appropriately.

#### 5. Registration of Students

- i. The students are to be registered with NIELIT Kolkata.
- ii. The admission of a student will be confirmed after registration. Without valid registration the students cannot be given any confirmation by the institute.

iii. The student should submit valid photo identification proof (valid Aadhar Card/ PAN Card/ Voter ID/ Passport/ Driving License) along with application form.

## 6. Eligibility

- i. The Candidate must submit the photocopy of photo identity proof and their educational qualification along with NIELIT application.
- ii. Taking admission in more than one course by a student will be discouraged.
- iii. The candidate will be selected by a committee comprising members of representatives of NIELIT Kolkata, West Bengal Electronics Industry Development Corporation (WBEIDC) and one official from local administration.
- iv. Academic eligibility of the students (according to the course).
- v. The following additional points will be considered for selection.
  - Economically Weaker sections (EWS) are preferred.
  - Basic Computer knowledge and intention to setup entrepreneurship.

#### 7. Conducting the Training Program

While Conducting the Training Program the Institute must assure the followings,

#### i. Infrastructure –

#### Hardware:

- a) Minimum 10 number of Computer Systems (for a batch size of minimum 20 and will increase proportionately) having latest configurations (Dual Core and above, Minimum of 1GB RAM, 20 GB Free hard disk space)
- b) Internet Connectivity: 1 Mbps line/ Broad Band
- c) Projector: Minimum 1
- d) Printer: Minimum 1 Printer
- e) Scanner: At least 1
- f) UPS Power supply adequate as per system requirement
- g) Webcam, Speaker
- h) Necessary hardware equipments for conducting electronics and electrical related course.

#### **Software:**

- a) Windows 7 or Above
- b) Antivirus
- c) Tally Package
- d) AUTOCAD Package
- e) Multimedia Course related Software
- f) Other software related to course

#### ii. Faculty Member quality –

Quality of faculties would be according to the following

#### **Computer Oriented Courses –**

- a) Faculty Graduate or higher with A or O Level or Diploma in Computer field / B Level / MCA / B.E/ B.Tech / M.Sc in Computer Science
- a) Lab Instructor BCA / Diploma in computer Science

#### **Electronics Oriented Courses –**

b) Faculty - B.E / B.Tech/ Diploma/ITI in Computer Science, Electrical or Electronics & communication, Instrumentation for Hardware Course/ Graduate with diploma in computer field or relevant experience

#### Lab Instructor -

a) ITI / Diploma Computer Science, Electrical or Electronics & communication, Instrumentation for Hardware Course/ Graduate with diploma in computer field or relevant experience

## Financial Accounting Courses -

a) Faculty – Graduate or higher (preferably in commerce stream) with relevant experience in Financial Accounting tools.

#### iii. Batch Strength -

Not more than 2 students are allowed to sit on a single computer during lab session. Not more than 30 candidates will be allowed in a single batch.

## 8. Eligibility of the Institutes

#### **Categorization of Institutes**

#### i. Category-A

- a) NIELIT IT-O/A/B Level Accredited Institutes
- b) CHM O /A Level Accredited Institutes
- c) NIELIT Training Partner for ESDM Courses
- d) Webel Informatics Limited (WIL) authorized Training Partners

#### ii. Category -B

- a) NIELIT CCC/BCC Affiliated Institute
- b) Common Service Center (CSC)

## iii.Category -C

Private institutes not included/qualifying in the above categories but having sufficient strength to conduct similar training program.

#### Jurisdiction of Training Institutes in different categories mentioned above

The NIELIT accredited institutes, NIELIT recognized ESDM Training Partners, WIL authorized training partners (Category –A) can conduct the training in their registered center location and in any other suitable venue having adequate infrastructure within six districts mentioned above in and around six IT Parks. Such suitable venues identified by the institute should be complete in all respect like sufficient infrastructure, PC, faculty member/trainer, well connected by public transport, etc.

NIELIT facilitation centers (Category -B) can only conduct the training in their registered center location within these six districts.

Private institutes (Category – C) having good infrastructure and facilities may also apply but their applications will be considered if sufficient responses are not received from the above stated categories. An Inspection by NIELIT or its representatives will be conducted from time to time to check the genuineness of the claim. An institute repetitively found to have inadequate infrastructure will be discontinued.

#### 9. Terms and Conditions relating to payment

#### Reimbursement to the institute:

- 1) For 42 hours course, mobilization and training @ Rs 900/- (including GST and other Govt. Levies & Taxes) per successful candidate
- 2) For 150 hours course, mobilization and training @ Rs 3215/- (including GST and other Govt. Levies & Taxes) per successful candidate
- 3) For 175 hours course, mobilization and training @ Rs 3750/- (including GST and other Govt. Levies & Taxes) per successful candidate

Training should be conducted for a batch of minimum 20 students to a maximum of 200 candidates in a single work order. For further extension based on performance, a new work order/ an extension letter may be issued indicating the maximum number of candidates with earlier Terms & Conditions.

## **Student Course Fees**

Subsidized course fees to be paid by the students,

#### Course fees

1) For 42 hours course student has to pay Rs 500/- + GST

- 2) For 150 hours course student has to pay Rs 1800/- + GST
- 3) For 175 hours course student has to pay Rs 2100/- + GST

#### • Payment procedure

Subsidized Course Fees collected from the students + GST to be directly deposited to bank as per following details by the institute:

- i. Name of A/C NIELIT Kolkata
- ii. Bank Name: Bank of India
- iii. Saving A/C No- 401010110006386
- iv. Branch-Jodhpur Park
- v. IFSC Code -BKID0004010
- The Institute has to raise bills batch wise along with supporting documents after the certification of each batch against which the payment would be released after verification.
- Successful Completion means passing in the final examination by the Students conducted by NIELIT Kolkata Centre.
- Claim for reimbursement should be made by the institute after declaration of result by NIELIT Kolkata.
- In case a student cannot pass the examination in the first go then he would be given a second chance at his/her own cost. No repeated claim against such student will be entertained.
- The amount of Course fees to be reimbursed to the Institute shall include all incidental expenditure relating to conduct the courses and examination. No further money can be claimed in any other form whatsoever.
- The institute having GST registration should clearly mention GST registration number in their bill. The amount of GST should be indicated separately in the bill.

The Expression of Interest (EOI) is attached in Annexure – II. A photocopy of the documents may be retained by the Applying Institutes before submission for future correspondence. All the authorized pages of this EOI along with documents should be submitted in a sealed envelope subscribing "EOI for engagement of Training Institute for Skilling youths in and around six IT Parks in West Bengal" on or before 17/01/2020. All correspondence should be addressed to the Director, NIELIT, Kolkata Centre, Jadavpur University Campus, Kolkata – 700032.

The existing associates of NIELIT Kolkata who are already working in the districts where IT park is located may convey their intension to conduct this Diploma and Advance Diploma Level courses as per Annexure- III through e-mail at rashmimv@nielit.gov.in, kkarkhan@nielit.gov.in only. These institutes have been inducted based of the submission of their previous EOI and approval of the authority.

# <u>Annexure – I</u>

# A) The following Courses of 42 hours will be offered in different phases:

# 1. Certificate Course in Android App Development (Total – 42 hrs)

## Minimum Eligibility: Graduate/ Diploma/A level/ O level

S. No	Topic	Theory Hours	Practi cal Hours
1	JAVA Programming basics	4	4
2	Introduction To Mobile Apps & Android, Android Architecture	2	2
3	Android Components, Building UI with Activities	1	4
4	Notifications, Multithreading, Styles And Themes	1	4
5	Intent, Intent Filters and Broadcast Receivers	1	4
6	Services, Location Based Services	1	4
7	Wi-Fi, Camera, Bluetooth	1	4
8	Android Application Deployment Projects	1	4
	Total	12	30

# 2. Certificate Course in IoT using Python (Total – 42 Hrs)

# Minimum Eligibility: Graduate/Diploma/ A level/ O level

S. No	Topic	Theory Hours	Practi cal Hours
1	What is IoT - In-depth explanation, Elements, Sensors	2	2
2	Arduino / Raspberry Pi ,Circuit Design, Programming, Interfacing	2	5
3	Python Programming, Function, Loop, Module, Conditioning, Classes etc.,	5	5
4	Matplotlib, Numpy, PIP, Opencv modules and programming using them	2	3
5	IoT module interaction using Python / Arduino Programming language	1	5
6	One IoT Implementation Project	0	10
	Total	12	30

# 3. Course on Office Automation and Practices (42 Hours)

Minimum Eligibility: X APPEARED/ PASS

Sl No	Topics	Theory Hours	Practi cal Hours
1	<ul> <li>Word and Excel</li> <li>Understanding Word Processing: <ol> <li>Word Processing Basics; Opening and Closing of</li> <li>documents; Text creation and Manipulation; Formatting of text; Table handling; Spell check,</li> <li>Language setting and thesaurus; Printing of word document.</li> </ol> </li> <li>Basics of Spreadsheet: <ol> <li>Manipulation of cells; Formulas and Functions; Editing of Spread Sheet, printing of Spread Sheet.</li> </ol> </li> </ul>	2	15
2	Bengali Typing  1. Bangla Word, Using Avro Keyboard	0	5
3	Photoshop  1. Using Adobe Photoshop CS5, Main menu & its activities.	2	8
4	<ol> <li>Hardware &amp; Networking</li> <li>Different parts of Computer, PC Assembly, Formatting of Hard disk,</li> <li>Partitioning of Hard disk in different logical drives,</li> <li>Disk defragmentation, Disk clean up, Scan disk,</li> <li>Printers, Scanner, Modem and their Installation,</li> <li>Type of Backup, Taking Backup files, Restore point</li> </ol>	2	8
	Total Hrs	6	36

# 4. Certificate Course in Assembly & Maintenance of PC (Total – 42 hrs)

# Minimum Eligibility: X APPEARED/ PASS

Sl No	Topics	Theor	Practi cal
	D : 0 1 :	Hours	Hours
1	Basic of computer, I/O devices	2	1
	1. What is Computer?		
	2. Components of Computer System		
	3. Concept of Hardware and Software		
	4. Input and output devices like Mouse, Keyboard, Plotter		
	etc		
2	Monitors (CRT/LCD/LED), Memory	2	3
	1. Computer monitors, functions, advantages and		

	disadvantages.  2. Memory system and its types (Main memory & Secondary memory), their differences		
3	<ul> <li>Hard Disk (SATA, USB, Solid State)</li> <li>1. Secondary memory like Hard Disk and its types.</li> <li>2. Formatting of Hard disk, Partitioning of Hard disk in different logical drives, Disk defragmentation, Disk clean up, Scan disk etc.</li> </ul>	2	2
4	Study of different types of Mother Board  1. Motherboard and its types  2. Motherboard Configuration, Identifying Internal and External connectors, Types of data cables		5
5	<ul><li>I/O Ports, graphic cards</li><li>1. Different types of I/O Ports available and their purpose</li><li>2. Graphic cards and its function</li></ul>	1	1
6	Installation of OS /printer/ modem / scanner  1. Installation of Operating System i.e. DOS/Windows  2. Printers, Scanner, Modem and their Installation		9
7	BIOS set up  1) Study of BIOS Set-up, Boot configuration, Boot Menu		2
8	Recovery & Trouble shooting  1. Type of Backup, Taking Backup files, Restore point, Automated System Recovery (ASR)  2. POST (Power on Self-Test), identifying problems by Beep codes errors, Troubleshooting Boot Failures, Replacement of components etc.		6
9	Preventive maintenance & Anti-Virus		2
10	<ol> <li>Virus and Running of virus protection programme Networking Fundamentals</li> <li>Networking Concept, advantages, Network topologies,         Types of networks, OSI model</li> <li>Networking components – switches, bridges, routers,         Catagogy, etc.</li> </ol>		4
	Gateways etc. 5. Transmission media- Guided media and Unguided media  Total Hrs	7	35

# 5. Certificate Course in Desk Top Publishing (Total – 42 hrs)

**Minimum Eligibility: X APPEARED/ PASS** 

SI No	Topics	Theory Hours	Pract ical Hour
1	Fundamentals of Computers  1. What is Computer?	2	

	2. Hard Disc, Printers		
	3. Different types of memory etc		
2	Photoshop (Adobe Photoshop)	2	12
	1. Understanding Tools & Workspace		
	2. Image/Photo Editing-Mixing-Enhancements		
	3. Creating Modeling & Wedding Photographs		
	4. Creating Digital Images & Backgrounds		
	5. Converting Color To B/W And B/W To Colour		
	6. Filters & Automated Options		
	7. Creating Web Graphics		
	8. Shortcuts To Work Efficiently		
3	Page maker	2	10
	1. Page layout Basics		
	2. Understanding Tools & Workspace		
	3. Creating:		
	4. Labels, Pamphlets		
	5. Bill books, Viz. Cards, Greetings Cards, Advertisements		
	etc.		
	6. Books & Booklets		
	7. Column Style Documents		
	8. Shortcuts To Work Efficiently		
4	Corel Draw	2	12
	1. Understanding Tools & Workspace		
	2. Drawing Shapes & Graphics		
	3. Logos & Artistic Text		
	4. Multicolor Designs: Viz. Cards & Greetings Cards, Book		
	Covers, Brochures, Advertisements, Banner		
	5. Web Graphics		
	6. Shortcuts To Work Efficiently		
	Total Hrs	8	34

# 6. Certificate Course in Soft Skill (Total – 42 hrs)

# Minimum Eligibility: X APPEARED/ PASS

S. No	Topic	Theory Hours	Practi cal Hours
1	Brief introduction to MS Office, Powerpoint and Microsoft Access	4	8
2	Brief introduction to: Spoken variety of English, the two chief spoken varieties-British and American; Indian English and idea of a neutral accent.		2
3	Consonant sounds, Vowel sounds in English: Pure vowels (Long		2

	vowels and short vowels) Phonetic Symbols,		
4	Refresher classes on English Grammar and Vocabulary		2
5	Connected Speech: Word stress and sentence stress	2	2
6	Reading from texts, computer aided teaching and learning exercises	1	2
7	Entry behaviour evaluation, Introductory Module on Personality Development		2
8	Presentation and speech giving techniques		2
9	Module on Office Etiquette		1
10	Module on Customer Care		1
11	Telephone handling Techniques		1
12	Module on Active Listening		1
13	Module on Product features and benefits		1
14	Module on call structure		1
15	Module on objection handling and questioning Techniques		1
16	Module on Telemarketing and Prospecting		1
17	Module on Complain handling and handling of difficult people		1
18	<ol> <li>Group Discussion</li> <li>Lesson on 'How to Face Interview', Body Language,</li> <li>Debating Competition</li> <li>Conduction of role-plays</li> <li>Conducting Mock interviews</li> <li>Interactive sessions</li> </ol>		4
	Total Hrs	7	35

# 7. Certificate Course in Multimedia (Total - 42 hrs)

# Eligibility: XII APPEARED/ PASS

Sl No	Topics	Theory Hours	Pract ical Hour s
1	Introduction to Multimedia	2	
	1. What is multimedia?		
	2. Components of multimedia		
	3. Web and Internet multimedia applications		
	4. Transition from conventional media to digital media		
2	Image Editing Basics	2	4

	Total Hrs	4	38
	3. Editing sound files, adding effect, recording sound clips.		
	2. Working with existing sound files		
	1. Introduction to Sound editing software,		-
8	Sound Editing		2
	5. Editing techniques, Transitions, Effects.		
	4. working with clips		
	3. Importing and capturing projects		
	2. Introduction to video editing tools & plugin concept		
	Effects  Embedding Sound and image in Adobe Pienner & Arter		
7	Sound and Image Embedding  1. Embedding Sound and Image in Adobe Premier & After		10
7	4. Basic concept of CSS -2,3 and Web page layout design		10
	3. Adding Multimedia Elements  4. Pagin general of CSS 2.3 and Web page levent design		
	Developing a Web page,		
	2. HTML (Basic): Create an index page from HTML,		
	Developing a Web page		
	1. HTML (Basic): Create an index page from HTML,		
6	Basics of Web Authoring		6
	Morphing, Introduction to Action Script 2.0		
	1. Cell Animation, Computer Animation, Tweening,		
5	Creating 2D Animation (Vector)		6
	Photoshop.		
	2. Computer Animation using Flash, Cell animation using		
	1. Motherboard and its types		
4	Creating 2D Animation (Raster)		6
	6. Providing aesthetics, Presentation of slide.		
	5. Inserting and deleting slides, Preparation of slides		
	presentation		
	4. Creating presentation using templates, Creating blank		
	3. Saving a presentation		
	2. Opening a PowerPoint presentation.		
	1. Introduction to PowerPoint		
3	Creating Presentation		4
	8. Photo Retouching		
	7. Gamma correction		
	6. Dynamic range correction		
	5. White balance correction		
	4. Use of image editing software (Image Editing - Basics),		
	3. Basic Image Processing [ Can Use Photoshop ]		
	PDF		
	Formats :GIF, JPEG, JPEG 2000, PNG, TIFF, EXIF, PS,		
	2. Dithering, 2D Graphics, Image Compression and File		

# 8. Certificate Course in Financial Accounting (Total – 42 hrs)

# Eligibility: XII APPEARED/ PASS with basic knowledge of Computer and Financial Accounting

Starting Tally   1. Tally Screen :- Button Bar, Calculator, Work Area, Gateway of Tally Menu   2. Creation of company, Alteration of company   3. Configuration Options available at Gateway of Tally   4. Enabling/Disabling Optional features of Tally   4. Enabling/Disabling Optional features of Tally   2   Account Masters   1. Hierarchy of accounts :- Ledger Accounts & Groups   2. Reserved Account Groups   3. Creation of Account Masters   Account Masters (Contd.)   1. Creation/Alteration of Groups   2. Alteration of Group/Ledger   4. Creation/Alteration of Multiple Ledgers/Groups   5. Copying Masters   6. Set Credit Limits & Credit Periods   1   2   2   2   3   3   3   3   3   3   3	Account			1
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1. Tally Screen :- Button Bar, Calculator, Work Area, Gateway of Tally Menu 2. Creation of company, Alteration of company 3. Configuration Options available at Gateway of Tally 4. Enabling/Disabling Optional features of Tally 2. Account Masters 1. Hierarchy of accounts :- Ledger Accounts & Groups 2. Reserved Account Groups 3. Creation of Account Masters Account Masters (Contd.) 1. Creation/Alteration of Groups 2. Alteration of System Generated Reserved Groups 3. Deletion of Group/Ledger 4. Creation/Alteration of Multiple Ledgers/Groups 5. Copying Masters 6. Set Credit Limits & Credit Periods 3. Account Vouchers 1. Voucher Screen:- Voucher Header, Voucher Body, Saving Voucher, Printing Voucher online 2. Payment, Receipt and Contra Vouchers 3. Use of Voucher Configuration Options (F12) 4. Account Vouchers (Contd.) 1. Sales, Purchase Vouchers 2. Debit Note, Credit Note 3. Journal Voucher 4. Creating new Voucher Types 5. Creating new Voucher Types 5. Creating new Voucher Class 4. Account Reports 1. Account Books :- Cash/Bank Book(s), Sales/Purchase Register, Debit Note/Credit Note Register, Ledgers 2. Statement of accounts 3. Trial Balance, Balance Sheet, Profit and Loss Account 4. Exception Reports 5. Fund Flow 6. Ratio Analysis	1	Starting Tally	1	i
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3. Configuration Options available at Gateway of Tally 4. Enabling/Disabling Optional features of Tally 2. Account Masters 1. Hierarchy of accounts: - Ledger Accounts & Groups 2. Reserved Account Groups 3. Creation of Account Masters Account Masters ( Contd.) 1. Creation/Alteration of Groups 2. Alteration of System Generated Reserved Groups 3. Deletion of Group/Ledger 4. Creation/Alteration of Multiple Ledgers/Groups 5. Copying Masters 6. Set Credit Limits & Credit Periods  3. Account Vouchers 1. Voucher Screen:- Voucher Header, Voucher Body, Saving Voucher, Printing Voucher online 2. Payment, Receipt and Contra Vouchers 3. Use of Voucher Configuration Options ( F12)  4. Account Vouchers (Contd.) 1. Sales, Purchase Vouchers 2. Debit Note, Credit Note 3. Journal Voucher 4. Creating new Voucher Types 5. Creating new Voucher Types 5. Creating new Voucher Class Account Reports 1. Account Books:- Cash/Bank Book(s), Sales/Purchase Register, Debit Note/Credit Note Register, Ledgers 2. Statement of accounts 3. Trial Balance, Balance Sheet, Profit and Loss Account 4. Exception Reports 5. Fund Flow 6. Ratio Analysis				
4. Enabling/Disabling Optional features of Tally  2. Account Masters 1. Hierarchy of accounts: - Ledger Accounts & Groups 2. Reserved Account Groups 3. Creation of Account Masters Account Masters (Contd.) 1. Creation/Alteration of Groups 2. Alteration of System Generated Reserved Groups 3. Deletion of Group/Ledger 4. Creation/Alteration of Multiple Ledgers/Groups 5. Copying Masters 6. Set Credit Limits & Credit Periods  3. Account Vouchers 1. Voucher Screen:- Voucher Header, Voucher Body, Saving Voucher, Printing Voucher online 2. Payment, Receipt and Contra Vouchers 3. Use of Voucher Configuration Options (F12)  4. Account Vouchers (Contd.) 1. Sales, Purchase Vouchers 2. Debit Note, Credit Note 3. Journal Voucher 4. Creating new Voucher Types 5. Creating new Voucher Class Account Reports 1. Account Books:- Cash/Bank Book(s), Sales/Purchase Register, Debit Note/Credit Note Register, Ledgers 2. Statement of accounts 3. Trial Balance, Balance Sheet, Profit and Loss Account 4. Exception Reports 5. Fund Flow 6. Ratio Analysis				
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Register, Debit Note/Credit Note Register, Ledgers 2. Statement of accounts 3. Trial Balance, Balance Sheet, Profit and Loss Account 4. Exception Reports 5. Fund Flow 6. Ratio Analysis	3	1	1	2
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<ul> <li>3. Trial Balance, Balance Sheet, Profit and Loss Account</li> <li>4. Exception Reports</li> <li>5. Fund Flow</li> <li>6. Ratio Analysis</li> </ul>				
<ul><li>4. Exception Reports</li><li>5. Fund Flow</li><li>6. Ratio Analysis</li></ul>				
5. Fund Flow 6. Ratio Analysis				
6. Ratio Analysis		± ±		
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6	Inventory Masters	1	2
	1. Introduction to inventory		
	2. Creation of Company for Accounts With Inventory		
	1. Features and configuration for inventory		
	2. Stock group & categories		
	3. Godowns		
	4. Units of Measurement etc		
7	Inventory Transactions	2	4
	1. Inventory and Accounting vouchers involved in Purchase		
	Procedure viz. Purchase Order, Goods Receipt Note,		
	Purchase Invoice, Rejection Outwards and Debit Note		
8	Inventory Transactions		
	1. Inventory and Accounting vouchers involved in Sales		
	Procedure viz. Sales Order, Delivery Note, Sales Invoice,		
	Rejection Inwards and Credit Note		
9	Inventory Transactions		1
	Physical Stock Voucher		
	2. Stock Journal		
10	Inventory Reports		
	1. Reports pertaining to inventory		
11	Advanced Features Of Tally	1	1
	1. Printing & Housekeeping		
	2. Backup & Restore		
12	Security Features of Tally		
	1. Tally Vault		
	2. Tally Locker		
	3. Security Control		
13	Business Management	1	1
	1. Introduction to Cost Centres, Cost Categories		
14	a. Special Features of Tally	1	1
	2. Memorandum Vouchers		
	3. Reverse Journals		
	4. Optional Vouchers		
	5. Post Dated Vouchers		
1.5	6. Using Scenarios and Budgets	4	- 1
15	1. Introduction to TDS	1	1
	2. Company configuration with TDS enabled		
	3. Voucher Entry		
1.6	4. Statutory reports	1	1
16	1. Introduction to TCS under Income Tax Act & GST (Form	1	1
17	16, 16A, 26AS, 26Q, 24Q	1	2
17	1. GST (concept, Act/Rules, Overview)	4	3
	2. CGST, SGST, IGST, UTGST, Composition, Reverse		
	Charge Mechanism, Input Tax Credit, Registration, Returns (GSTR-2, GSTR-2A, GSTR-1, GSTR-1A,		
	Returns (GSTR-2, GSTR-2A, GSTR-1, GSTR-1A, GSTR-3, GSTR-3B)		
	USIN-3, USIN-3D)		

18	1. Opening balance sheet & closing/ final balance sheet	1	1	
	Total Hrs	18	24	

# 9. Certificate Course on Solar Technologies (Total – 42 Hrs)

**Eligibility: XII APPEARED/ PASS** 

SI no	Course Content	Theory Hours	Pract ical Hour
1	Introduction to Solar cell and Solar panel, Basic knowledge of electrical measurement, Battery, inverter, motor, other components and Soldering	6	2
2	Solar street light installation	2	4
3	Solar panel installation for household	2	5
4	Working of Submersible Motor Water Pump using solar panel	2	6
5	Solar power converter (DC to AC)	2	2
6	Current multiplication method used in solar power house	2	3
7	Assignment & Evaluation	0	4
	Total Hrs	16	26

# 10. Certificate Course in Basic Computer Operation

Minimum Eligibility: VII APPEARED/ PASS

Sl No	Topics	Theory Hours	Practi cal Hours
1	<ol> <li>Knowing computer</li> <li>Basic Applications of Computer;</li> <li>Components of Computer System,</li> <li>Central Processing Unit (CPU), VDU, Keyboard and Mouse, Other input/output Devices,</li> <li>Computer Memory, Concepts of Hardware and Software;</li> <li>Connecting keyboard, mouse, monitor and printer to CPU and checking power supply.</li> </ol>	2	2
2	Operating Computer using GUI Based Operating System  1. What is an Operating System;  2. Basics of Popular Operating Systems;  3. The User Interface, Using Mouse;  4. Using right Button of the Mouse and Moving Icons on the screen, Use of Common Icons, Status Bar, Using Menu and Menu-selection, Running an Application, Viewing of	2	6

Min Age: 14 yrs

	File, Folders and Directories, Creating and Renaming of files and folders, Opening and closing of different		
	Windows;		
3	5. Using help; Creating Short cuts, Basics of O.S Setup		10
3	Understanding Word Processing:		10
	4. Word Processing Basics; Opening and Closing of documents; Text creation and Manipulation; Formatting		
	of text; Spell check, Language setting and thesaurus		
	5. Table handling		
	6. Printing of word document.		
	o. Finding of word document.		
4	Basics of Spreadsheet:		6
	1. Manipulation of cells;		
	2. Formulas and Functions;		
	3. Editing of Spread Sheet, printing of Spread Sheet.		
5	Introduction to Internet, WWW and web browsers	2	6
	1. Basic of Computer networks;		
	2. LAN, WAN; Concept of Internet;		
	3. Different applications of Internet;		
	4. Basics of internet connectivity related troubleshooting,		
	5. What is ISP; World Wide Web; Web Browsing softwares,		
	Search Engines;		
	6. Understanding URL; Domain name; IP Address;		
	7. Using e-governance website		
	Communications and Collaboration		2
	1. Basics of electronic mail;		
	2. Getting an email account;		
	3. Sending and receiving emails;		
	4. Instant Messaging; Netiquettes.		
6	Bengali Typing		4
	Bangla Word, Using Avro Keyboard	_	
	Total Hrs	6	36

# 11. Certificate Course in PC Hardware and Maintenance

Minimum Eligibility: VIII APPEARED/ PASS Min Age: 14 yrs

SI No	Topics	Theor	Practi
		y	cal
		Hours	Hours
1	Basic of computer, I/O devices	2	2
	5. What is Computer?		
	6. Components of Computer System		
	7. Concept of Hardware and Software		
	8. Input and output devices like Mouse, Keyboard, Plotter		

	etc		
2	Monitors (CRT/LCD/LED), Memory	2	3
	3. Computer monitors, functions, advantages and		
	disadvantages.		
	4. Memory system and its types (Main memory & Secondary		
	memory), their differences		
3	Hard Disk (SATA, USB, Solid State)	2	6
	3. Secondary memory like Hard Disk and its types.		
	4. Formatting of Hard disk, Partitioning of Hard disk in		
	different logical drives, Disk defragmentation, Disk clean		
	up, Scan disk etc.		
4	Study of different types of Mother Board		3
	3. Motherboard and its types		
	4. Motherboard Configuration, Identifying Internal and		
	External connectors, Types of data cables		
5	I/O Ports, graphic cards		2
	3. Different types of I/O Ports available and their purpose		
ļ	4. Graphic cards and its function		
6	Installation of OS /printer/ modem / scanner		10
	3. Installation of Operating System i.e. DOS/Windows		
	4. Printers, Scanner, Modem and their Installation		
7	BIOS set up		4
	2) Study of BIOS Set-up, Boot configuration, Boot Menu		
8	Recovery & Trouble shooting		4
	6. Type of Backup, Taking Backup files, Restore point,		
	Automated System Recovery (ASR)		
9	Preventive maintenance & Anti-Virus		2
	2. Virus and Running of virus protection programme		
	Total Hrs	6	36

# 12. Foundation Course in Financial Accounting

# Eligibility: X APPEARED/ PASS

SI No	Topics	Theory Hours	Pract ical Hour
1	Starting Tally	2	2
	<ul> <li>Tally Screen: Button Bar, Calculator, Work Area, Gateway of Tally Menu</li> <li>Creation of company, Alteration of company</li> <li>Configuration Options available at Gateway of Tally</li> <li>Enabling/Disabling Optional features of Tally</li> </ul>		
2	Account Masters	2	4
	Hierarchy of accounts :- Ledger Accounts & Groups		

	<ul> <li>Reserved Account Groups</li> <li>Creation of Account Masters</li> <li>Account Masters ( Contd.)</li> <li>Creation/Alteration of Groups</li> <li>Alteration of System Generated Reserved Groups</li> <li>Deletion of Group/Ledger</li> <li>Creation/Alteration of Multiple Ledgers/Groups</li> <li>Copying Masters</li> <li>Set Credit Limits &amp; Credit Periods</li> </ul>		
3	<ul> <li>Account Vouchers</li> <li>Voucher Screen: Voucher Header, Voucher Body, Saving Voucher, Printing Voucher online</li> <li>Payment, Receipt and Contra Vouchers</li> <li>Use of Voucher Configuration Options (F12)</li> </ul>	2	4
4	Account Vouchers (Contd.)  • Sales , Purchase Vouchers  • Debit Note, Credit Note  • Journal Voucher  • Creating new Voucher Types  • Creating new Voucher Class	4	4
5	<ul> <li>Account Reports</li> <li>Account Books :- Cash/Bank Book(s), Sales/Purchase Register, Debit Note/Credit Note Register, Ledgers</li> <li>Statement of accounts</li> <li>Trial Balance, Balance Sheet, Profit and Loss Account</li> <li>Exception Reports</li> <li>Fund Flow</li> <li>Ratio Analysis</li> <li>Interest Calculations</li> </ul>	2	2
6	<ul> <li>Inventory Masters</li> <li>Introduction to inventory</li> <li>Creation of Company for Accounts With Inventory</li> <li>Features and configuration for inventory</li> <li>Stock group &amp; categories</li> <li>Godowns</li> <li>Units of Measurement etc</li> </ul>	2	4
7	Inventory Transactions  • Inventory and Accounting vouchers involved in Purchase Procedure viz. Purchase Order, Goods Receipt Note, Purchase Invoice, Rejection Outwards and Debit Note	4	4
8	Inventory Transactions  • Inventory and Accounting vouchers involved in Sales Procedure viz. Sales Order, Delivery Note, Sales Invoice, Rejection Inwards and Credit Note		

Total Hrs 18	24
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# 13. Certificate course in Basic Repairing of Printer and Cartridges

Minimum Eligibility: VIII APPEARED/ PASS

Sl No	Topics	Theory Hours	Practi cal Hours
1	<ul> <li>Introduction and Classification of Printer</li> <li>What is Printer?</li> <li>Types of Printer</li> </ul>	2 hrs	8 hrs
	<ul><li>Working Principle of Printer</li><li>Types of Cartridge and Ink</li></ul>		
2	<ul> <li>Printer Sharing</li> <li>Laser Printer Sharing</li> <li>Driver installation</li> <li>Error finding</li> <li>Various types of Troubleshooting of Laser Printer</li> <li>Working Principle of Laser Printer</li> </ul>	2 hrs	10hrs
3	<ul> <li>Cartridge Refilling and Basic Repair of laser Printer</li> <li>Cartridge Refilling(12A &amp; 88A)</li> <li>Basic Maintenance of Laser Printer</li> </ul>	2 hrs	18hrs
	Total Hrs	6 hrs	36 hrs

# 14. Digital Marketing

Eligibility: XI APPEARED/ PASS (APPEARED/ PASSED)

S.NO	Topic	Theory (HOURS)	Practical (HOURS)
1	Introduction to ICT: Introduction about computers Basics of Word Processing Basics of Excel	3	3
2	Introduction to Internet: Basic of Internet How to use email How to use search engines	3	3
3	What is Digital Marketing: Understanding Digital Marketing Process Visitors Engagement Increasing visibility	3	
4	Introduction to E-Commerce Sites:  Types of E-Commerce Sites Introduction about various E-Commerce sites How to use E-Commerce Sites Popular e - Commerce Sites like Flipkart, Amazon, ebay, Myntra, Jabong, Snapdeal etc Impact of e - Commerce	5	4
5	Using e - Commerce Sites:  Registering on e - commerce sites  Registering products on e - Commerce sites  Placing Advertisement on E-Commerce sites  Creating a product catalogue on e - Commerce sites  Marketing products on e - Commerce sites  Integrating Social media for marketing campaign  Modes of Payments	6	8
6	Sales and Feedback Analysis: Basic introduction about Google analysis Using Google Analytics Usage of Mobiles for e-Commerce	1	3

# B) The following Courses of 150 hours will be offered in different phases:

# 1. Diploma in Computer Application

# Eligibility: XII APPEARED/ PASS

S. No	Topic	Theory Hours	Practi cal Hours
1	Computer Fundamentals and Office Automation	20	20
	Unit – I Fundamentals of Computers		
	<ul> <li>Diagram of Computer H/W, CPU</li> </ul>		
	<ul> <li>Memory</li> </ul>		
	• Concepts of H/W, S/W		
	<ul> <li>Concepts of OS</li> </ul>		
	<ul> <li>Creating, Copying, Moving, Deleting Folder &amp; Files</li> </ul>		
	<ul> <li>Searching Folder or Files</li> </ul>		
	Unit – II MS-Word		
	<ul> <li>Clip board feature, Editing feature, Font</li> </ul>		
	<ul> <li>Tables, Pages, Header &amp; Footer, OLE</li> </ul>		
	• Page Setup & Background, Colour, Footnote, Spelling &		
	Grammar, word count, Protect Document		
	• Style, Border, Paragraph		
	Mail Merge document		
	<ul> <li>Macro Recording &amp; Executing</li> </ul>		
	Unit – III MS-Excel		
	<ul> <li>Workbook, worksheet, Excel functions</li> </ul>		
	<ul> <li>AutoFilter, Advance Filter, Sorting</li> </ul>		
	<ul> <li>Different types of Charts</li> </ul>		
	Data Validation, Hyperlink		
	<ul> <li>Pivot table, Insertion of symbol</li> </ul>		
	Macro Recording & Executing		
	Unit – IV MS-PowerPoint		
	<ul> <li>Creating, Opening and Saving Presentations</li> </ul>		
	<ul> <li>Creating the Look of Your Presentation</li> </ul>		
	Working in Different Views		
	Working with Slides		
	Adding and Formatting Text		
	Adding Clip Art and other pictures		
	Designing Slide Shows		
	<ul> <li>Running and Controlling a Slide Show</li> </ul>		
2	Introduction to DBMS	20	20
	Unit-I Data Base Management System		
	What is database?		
	Why database?		
	Architecture of Database Management System		

	<ul> <li>Advantages of DBMS</li> </ul>		
1	Unit –II Data Base Tables		
	<ul> <li>Tables- Introduction to Tables, Different Ways of creating a table, Guidelines for naming fields</li> </ul>		
	Controls and Objects		
	Create a table using the Table Wizard		
	Designing a Table- Create a table from scratch using Design		
	view		
	Setting Primary Keys		
	<ul> <li>Modifying the Table Design - To insert the field within the table</li> </ul>		
	Rename a field name in a table		
	<ul> <li>Deleting Fields, Moving Fields, Changing a Field Size, Saving a Table</li> </ul>		
	Sorting and Filtering Data in a Datasheet - Quick-Sort Feature		
1	Unit-III Query Basics and SQL		
	<ul> <li>Query Basics- What is a Query? Usage of Queries, Types of Queries</li> </ul>		
	Steps for Creating a Query		
	<ul> <li>Removing a Field, Inserting a Field, Hiding Fields</li> </ul>		
	Working with Action Queries		
3 1	Internet and Web Page Designing	15	20
	Unit – I Internet	13	20
	Evolution, Protocols, Interface Concepts		
	* · · · · · · · · · · · · · · · · · · ·		
	• Internet Vs Intranet		
	<ul> <li>Growth of Internet, ISP, Connectivity – Dial-up, Leased line</li> </ul>		
	• Growth of Internet, ISP, Connectivity – Dial-up, Leased line		
	<ul> <li>Growth of Internet, ISP, Connectivity – Dial-up, Leased line</li> <li>URLs, Domain names, Portals</li> <li>POP and WEB Based E-mail</li> <li>Basic of Sending &amp; Receiving E-mail</li> </ul>		
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HTML editors	
Image editors	
Issues on Web site creations & Maintenance	
FTP software for upload web site	
Unit – IV HTML	
• Concepts of Hypertext	
Versions of HTML	
Elements of HTML syntax	
Head & Body Sections	
Building HTML documents	
Inserting texts, Images, Hyperlinks	
Backgrounds and Colour controls	
Different HTML tags	
Table layout and presentation	
Use of font size & Attributes	
List types and its tags	
	0
Application	. •
Unit – I Soft Skills and Communicative English	
Brief introduction to: Spoken variety of English, the two chief	
spoken varieties-British and American; Indian English and idea	
of a neutral accent	
Refresher classes on English Grammar and Vocabulary	
Connected Speech: Word stress and sentence stress	
Reading from texts, computer aided teaching and learning exercises	
Entry behaviour evaluation, Introductory Module on	
Personality	
Presentation and speech giving techniques	
Module on Office Etiquette	
Module on Customer Care  The last of the Customer Care  T	
Telephone handling Techniques	
<ul> <li>Module on Active Listening</li> <li>Module on Product features and benefits</li> </ul>	
<ul> <li>Module on Product reatures and benefits</li> <li>Module on objection handling and questioning Techniques</li> </ul>	
Power point Presentation	
Module on Telemarketing and Prospecting	
Module on Complain handling and handling of difficult people	
Group Discussion	
Conducting Mock interviews	
Interactive sessions	
Unit – II Financial Literacy for Banking Scheme and Applications	

	Mini Project		15
	Total	65	70
•	Password security and ATM withdrawal		
•	Mobile banking		
•	Bank's services including remittances		
•	Types of bank accounts		
•	Opening of bank account and documents required		
•	Know Your Customer (KYC)		
•	Banking Services Delivery Channels		
•	Demand Draft (DD)		
•	Banking Instruments-Cheque		
•	Banking products-ATM card		
•	Why save in a bank		
•	Why savings are needed		

# 2. Diploma in PC Hardware, Networking and Solar Technology (150 Hous)

## **Eligibility: XII APPEARED/ PASS**

S. No	Topic	Theory Hours	Practical Hours
	HARDWARE AND NETWORKING		
1	Introduction to Computer, Uses of Computer, Different between Hardware & Software, Different types of components inside PC and its peripherals devices	2	
2	Identification and understanding of Different Motherboard Components, CPU, North Bridge & South Bridge, PCI Slot, DIMM slot, Power Connector, Computer Front Panel and Back Panel, Connectors		2
3	Understand different types of memory	2	
4	Different types of motherboard and cards which are used in computer Different types of motherboard, controller cards, display cards, sound card AGP cards FAX/Modem Cards, TV Tuner Cards, LAN Cards, Ethernet cards	2	2
5	Introduction to Number Systems (Decimal, Binary, Octal, Hexa)	2	
6	Booting concept of computer in DOS and Windows environment		2
7	BIOS setup utility and configuring the BIOS like booting sequence, system date, setting administrative password, USB enabling etc.		4

8	Formatting and partitioning of HDD		4
9	Installation of Operating System i.e. DOS/Windows, Off-line drive installation / online drive Installation/Pen Drive bootable		8
10	BIOS password break / Administrative password break		2
11	Driver backup/restore, Data recovery		4
12	Application types of application software and their Installation		4
13	Antivirus Software Installation/ different types of Antivirus Software/ Protect PC from Virus		2
14	Installation of multiple Operating System in a computer		4
15	Hard Disk drive installation and configuration setting, Use of CD ROM and DVD Drive		4
16	Power supplies installation and troubleshooting, Different types of SMPS identifications	2	2
17	Different types of monitors, Monitors, Mouse, Keyboard Repairing / Maintenance	2	2
18	Trouble shooting of different types of faults, Different computer cards identifications and troubleshooting		6
19	Different types of printers and their usage	4	
20	Repairing of different types of printers (LaserJet, inkjet etc.)		6
21	Antivirus and its current trends. Configuration and maintenance of virus protection programme	2	
22	Running of Scan disk and Disk defragmenter as part of preventive maintenance		2
23	Patches /service pack in Windows and its update in both.		2
24	Understand the beep codes error during POST, running of diagnostic tools		4
25	Preventing, Maintenance and Cleaning, servicing of computer	2	
26	Networking Concept, advantages, Network topologies, Types of networks, OSI model	2	
27	Networking Components - switches, bridges, routers, Gateways etc.		2
28	Transmission media- Guided media and Unguided media	2	
29	Crimping of cables straight cable, cross cable		2
30	IP configuration and working with various protocols, Installation of Network card in system and connecting system in LAN		6
31	Software based Firewall Installation & understanding firewall	1	3

	logs, virtual private network, VoIP		
	SOLAR TECHNOLOGY		
1	Introduction to Solar PV Installer	2	
2	Basics of solar and electrical energy: AC, DC, Earthing, Circuit Designing, Related laws and formulas	3	
3	Basics of solar photovoltaic System: Components, types, Sun path Diagram, Technical parameters and performance	4	
4	Tools and equipment used for solar PV installation		4
5	Site Survey for solar PV installation: Load assessment, site assessment, customer requirement		6
6	Procure Solar PV Solar system components		3
7	Install Civil and mechanical parts of solar PV system: Mounting, equipment foundation, Install battery bank stand and inverter stand		6
8	Installation of electrical components of solar photovoltaic system: Install electrical components, conduits, cables, grounding system		6
9	Test and commission solar PV system: Testing of solar array, continuity, charge controllers, battery, start up system		5
10	Maintain solar photovoltaic system		3
11	Maintain personal health and safety at project site	2	
12	Customer orientation for a solar PV System: Demonstrate working principle and hand over of documents	2	
	Mini Project		

# 3) Diploma in Multimedia Animation (150 hrs)

# Eligibility: XII APPEARED/ PASS

S. No	Topic	Theory Hours	Practi cal Hours
1	Computer Appreciation:	4	
	What is a computer, basic structure of computer, data		

	representation in computer [Binary number system, Hexadecimal number system, Binary to Decimal Conversion, Decimal to Binary Conversion, Binary Coded Decimal (BCD) Code, ASCII Code, UNICODE, representation of visual data.		
2	Computer Organization:	9	2
	Central Processing Unit  Eundamentals of Control Unit Arithmetic Unit Instruction Set		
	Fundamentals of Control Unit, Arithmetic Unit, Instruction Set, Register. Concept of Processor Speed, illustration with popular processors. Basic introduction to GPU		
	Memory and Storage		
	Memory Organization, RAM., Read Only Memories, Flash memory. Basics of other storage devices – HDD, CD/DVD, Blue-Ray, magnetic tape etc.		
	Input Devices		
	Keyboard, Mouse, microphone, trackball, joystick, Scanner. OMR, Bar/QR-code reader, MICR Digitizer, Card Reader, cameras, fingerprint scanner and other biometric devices, tablets		
	etc.		
	Output Devices		
	Display (CRT, LCD, LED), Printers - Dot matrix, Inkjet, laser, Plotters, Projector and visualiser,		
	Ports and Interfaces		
	Serial and Parallel ports, Connectors: DIN, RCA, AV; USB, Fire wire (IEEE1394), HDMI		
	Computer Software		
	Relationship between Hardware and Software; System Software, Application Software, compiler, assemblers, linkers, loaders		
3	Introduction to Multimedia:  Definition of Multimedia, Multimedia objects: Text, Graphics, Animation, Audio, images, Video. Definition of HyperText and HyperMedia. Multimedia Applications in Education, Entertainment. Advertising world etc. Components of a Multimedia System, Desirable Features for a Multimedia System, requirements of Multimedia Communication	4	
4	Representation of Multimedia Objects:	10	

	• Representation of Analog Signals, A/D: Sampling and quantization		
	Text: Font and their representation (bitmap, true type)		
	Graphics: Raster & Vector representation, aliasing problems		
	• Image: (bit depth, resolution, color (RGB, CMYK, HSB), introduction to BMP, GIF, TIFF, PNG and JPEG formats)		
	• Audio (speech and wideband audio, sampling rate and aliasing, quantization, introduction to MP3, WMA, WAV, MIDI etc.)		
	• Video (frame rate and resolution, interlaced and non-interlaced video, colour planes (YCBCR, YUV), Video broadcast standards (PAL, NTSC, SECAM), HD Video, 3D TV, Video representation: AVI, MPEG, Quick Time, real video (.rm)		
5	Concepts of Multimedia Editing: Digital Audio, Music Sequencing and Notation, Image/Graphics	2	8
	Editing, Video Editing (Linear, Non-linear), Subtitling		
6	Introduction to Compression Technology:  Concept of lossy and lossless compression, Concept of rate-distortion	3	3
	characteristics, Basics image compression (JPEG, JPEG 2000), Basics		
	of Audio compression (MP3, MP4), Basics of Video Compression		
	(MPEG, H.264)		
7	Multimedia Application Design:	2	8
	Content design, technical design, visual design, design metaphors,		
	example studies, interactivity		
8	Multimedia Authoring and Publishing:  Definition of an Authoring System, uses of an authoring system,	5	15
	Definition and function of Authoring Metaphor, Different Metaphors.		
	Offline Publishing: Flash, Power Point		
	Online Publishing: HTML5, Dreamweaver		
9	Multimedia Processing Techniques:	2	
	Definition of Image, Raster Graphics, Vector Graphics, Digital Image		
	Representation, Bit allocation for intensity range.		
10	Digital representation of Color: Basic color models (RGB, CMYK,HSV) and their use color	2	
	Characteristics, Color Palette, Monitor vs Print Display.		
11	Introduction to MIDI: Definition, MIDI Interfaces, MIDI Instruments, MIDI file structures,	2	

	MIDI file formats		
12	Image Editing: (Photoshop as reference software tool)	4	20
	Masks and Channels:		
	Working with masks and channels, Creating a quick mask, Editing a		
	quick mask, Saving a selection as a mask, Editing a mask, Loading a		
	mask as a selection and applying effects, Creating a gradient mask,		
	Loading the gradient mask as a selection and applying effects.		
	Retouching and Repairing:		
	Using the Clone Stamp tool for repair, Using the Pattern Stamp tool to		
	create, Using the Healing Brush and Healing Patch to repair flaws,		
	History palette and snapshots.		
	Painting and Editing:		
	Using the Photoshop paint engine, Using blending modes, Painting		
	shadows and highlights, Smoothing the edges of strokes, Using the		
	History Brush and the Art History Brush, Brush palette, Painting with		
	specialty brushes, Using the Color and Swatch palettes, Adding brush		
	libraries, Saving customized preset brushes, Image and canvas size,		
	Creating and painting with custom brushes, Pattern Maker filter.		
	Basic Pen Tool Techniques:		
	Drawing paths with the pen tool, Drawing straight paths, Drawing		
	curved paths, Combining straight and curved lines, Drawing a path		
	around artwork, Using keyboard shortcuts		
	Creating Special Effects:		
	Automating multi-step tasks, Playing and batch-playing actions, Using		
	guides, Saving and loading a selection, Hand-coloring selections on a		
	layer, Combining and moving selections, Colorizing a selection,		
	Adjusting color balance, Applying filters, Creating a cutout effect,		
	Improving performance with filters.		
13	Image and Graphic Pattern Generation:		10
	(Adobe illustrator & Indesign as reference software tool)		
	Creating Basic Shapes:		
	Setting up the document, Using the tools, Drawing shapes, Painting		
	artwork, Copying & scaling shapes, Painting, Filling with color,		
	Stroking with color, Building a custom palette, Copying paint		

attributes, Saturating colors, Painting with patterns and gradients, Painting with a pattern brush, Drawing with the Pen, Drawing straight lines, Drawing curves, Editing curves.

#### **Working with Brushes:**

Using the Art Brushes, Using Scatter Brushes, Changing the color attributes of brushes, Using a fill color with brushes, Using Calligraphic brushes, Using Pattern brushes, Using Pattern brushes, Creating brushes.

#### **Transforming Objects:**

Scaling objects, Rotating objects, Distorting objects, Changing the perspective, Using the Free Transform tool, Making multiple transformations.

#### **Blending Shapes and Colors:**

Creating a gradient fill, Adjusting the direction of the gradient blend, Adding colors to a gradient, Creating smooth-color blends, Blending intermediate steps, Modifying the blend, Combining blends with gradients, Creating Shapes with the Pathfinder, Uniting shapes, Removing shapes to create a new object, Intersecting objects, Trimming objects, Blending colors with the Soft Mix command, Blending colors with the Hard Mix command, Dividing shapes with the Divide command.

#### **Creating Lavers:**

Moving objects and layers, Locking layers, Viewing layers, Pasting layers, Merging layers.

#### **Creating Watercolor or Airbrush Effects:**

Setting Smart Guide preferences, Painting with the gradient mesh tool, Specifying the number of mesh lines, Applying colors to the mesh, Highlighting a mesh object, Editing mesh points, Reflecting mesh objects, Modifying mesh lines.

#### **Drawing Cylinders and Boxes:**

Drawing three-dimensional objects, Drawing Cylinders, Drawing boxes.

## **Printing Artwork & Producing Color Separations:**

Overview of printing, Color management, Printing B&W proofs, Document info command, Creating Color separations, Working with

	two-color illustrations, Creating a trap, Overprinting objects,		
	Combining Photoshop & Illustrator, Vector vs. bitmap, Placing a		
	Photoshop file, Copying a placed image, Adjusting color in a placed		
	image, Masking an image, Sampling colors in placed images,		
	Replacing a placed image.		
	Preparing Graphics for Web Publication: Optimizing images for the Web, Exporting flat-color artwork,		
	Exporting continuous- tone and gradient artwork, Linking objects in		
	an image map to URL's.		
14	Sound Editing: (Sonic Sound forge as reference software tool) Introduction to Sound editing software, Working with existing sound		4
	files, Editing sound files, adding effect, Recording sound clips,		
	Dubbing.		
15	Video Editing: (Adobe Premier as reference software tool)		8
	Introduction to video editing tools, Importing and capturing projects,		
	working with clips, Editing techniques, Transitions, Video Effects.		
16	VFX : After Efects Tools:		5
	Chroma (Green Screen/ Blue Screen) cut/Rotoscoping/ Motion		
	track/Special Effects/ Camera tracking/ Compositing.		
17	Application Examples/ Case studies:	2	6
	Need for design, Design Specifics, Scripts, Storyboards, Advantages		
	and Effectiveness of Storyboards, Flowcharts, Writing a script, Screen		
	Layout Designs. Human Computer Interaction, Hypermedia &		
	navigation.		
	Mini Project		10

# C) The following Courses of 175 hours will be offered in different phases:

1) Advance Diploma in Computer Application (175 hours)

# **Eligibility: GRADUATE (APPEARED/ PASSED)**

S. No	Topic	Theory Hours	Practi cal Hours
1	Computer Fundamentals and Office Automation	20	20
	Unit – I Fundamentals of Computers		
	<ul> <li>Diagram of Computer H/W, CPU</li> </ul>		
	Memory		
	• Concepts of H/W, S/W		
	• Concepts of OS		
	<ul> <li>Creating, Copying, Moving, Deleting Folder &amp; Files</li> </ul>		
	Searching Folder or Files		
	Unit – II MS-Word		
	Clip board feature, Editing feature, Font		
	Tables, Pages, Header & Footer, OLE		
	Page Setup & Background, Colour, Footnote, Spelling &		
	Grammar,word count, Protect Document		
	Style, Border, Paragraph		
	Mail Merge document		
	Macro Recording & Executing		
	Unit – III MS-Excel		
	Workbook, worksheet, Excel functions		
	AutoFilter, Advance Filter, Sorting		
	Different types of Charts		
	Data Validation, Hyperlink		
	Pivot table, Insertion of symbol		
	Macro Recording & Executing		
	Unit – IV MS-PowerPoint		
	Creating, Opening and Saving Presentations		
	Creating the Look of Your Presentation		
	Working in Different Views		
	Working with Slides		
	Adding and Formatting Text		
	Adding Clip Art and other pictures		
	Designing Slide Shows		
	<ul> <li>Running and Controlling a Slide Show</li> </ul>		
2	Introduction to DBMS	20	20
	Unit-I Data Base Management System		
	What is database?		
	Why database?		
	Architecture of Database Management System		
	Advantages of DBMS		

Unit –	II Data Base Tables		
•	Tables- Introduction to Tables, Different Ways of creating a		
	table, Guidelines for naming fields		
•	Controls and Objects		
•	Create a table using the Table Wizard		
•	Designing a Table- Create a table from scratch using Design		
	view		
•	Setting Primary Keys		
•	Modifying the Table Design - To insert the field within the		
	table		
•	Rename a field name in a table		
•	Deleting Fields, Moving Fields, Changing a Field Size, Saving		
	a Table		
<b>■</b>	Sorting and Filtering Data in a Datasheet - Quick-Sort Feature		
Unit-			
•	Query Basics- What is a Query? Usage of Queries, Types of		
	Queries		
•	Steps for Creating a Query Removing a Field, Inserting a Field, Hiding Fields		
	Working with Action Queries		
	working with Action Queries		
3 Intern	et and Web Page Designing	15	20
Unit –	I Internet		
•	Evolution, Protocols, Interface Concepts		
•	Internet Vs Intranet		
•	Growth of Internet, ISP, Connectivity – Dial-up, Leased line		
	URLs, Domain names, Portals		
•	POP and WEB Based E-mail		
	Basic of Sending & Receiving E-mail E-mail Protocols		
	FTP		
Unit –			
	History, Working, Web Browsers and its functions		
	Concept of Search Engines		
•	Searching the Web, HTTP, URLs, Web Servers, Web Protocols		
Unit –			
•	Concepts		
•	Domain name Registration		
•	Space on Host Server for Web site		
•	HTML		
•			
•	HTML editors		
•	Design tools		

<ul> <li>Image editors</li> <li>Issues on Web site creations &amp; Maintenance</li> <li>FTP software for upload web site</li> <li>Unit – IV HTML</li> <li>Concepts of Hypertext</li> <li>Versions of HTML</li> <li>Elements of HTML syntax</li> <li>Head &amp; Body Sections</li> <li>Building HTML documents</li> <li>Inserting texts, Images, Hyperlinks</li> <li>Backgrounds and Colour controls</li> </ul>	
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Use of font size & Attributes	
List types and its tags	
4 Soft Skills and Financial Literacy for Banking Skill with 10	10
Application	
Unit – I Soft Skills and Communicative English	
Brief introduction to: Spoken variety of English, the two chief	
spoken varieties-British and American; Indian English and idea	
of a neutral accent	
Refresher classes on English Grammar and Vocabulary	
Connected Speech: Word stress and sentence stress  Paralling forms to the constant and described to the constant and desc	
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Personality	
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Module on Office Etiquette	
Module on Customer Care	
Telephone handling Techniques	
Module on Active Listening	
Module on Product features and benefits	
Module on objection handling and questioning Techniques	
Power point Presentation	
<ul> <li>Module on Telemarketing and Prospecting</li> <li>Module on Complain handling and handling of difficult people</li> </ul>	
<ul> <li>Module on Complain handling and handling of difficult people</li> <li>Group Discussion</li> </ul>	
Conducting Mock interviews	
Interactive sessions	
Unit – II Financial Literacy for Banking Scheme and Applications	
Why savings are needed	

Major Project		25
Mini Project		15
Total	65	70
<ul> <li>Password security and ATM withdrawal</li> </ul>		
Mobile banking		
Bank's services including remittances		
Types of bank accounts		
Opening of bank account and documents required		
• Know Your Customer (KYC)		
<ul> <li>Banking Services Delivery Channels</li> </ul>		
Demand Draft (DD)		
Banking Instruments-Cheque		
Banking products-ATM card		
Why save in a bank		

# 2) Advance Diploma in Hardware, Networking and Solar Technology (175 hours)

# Eligibility: GRADUATE (APPEARED/ PASSED)

S. No	Topic	Theory Hours	Practical Hours
HARDWARE AND NETWORKING			
1	Introduction to Computer, Uses of Computer, Different between Hardware & Software, Different types of components inside PC and its peripherals devices	2	
2	Identification and understanding of Different Motherboard Components, CPU, North Bridge & South Bridge, PCI Slot, DIMM slot, Power Connector, Computer Front Panel and Back Panel, Connectors		2
3	Understand different types of memory	2	
4	Different types of motherboard and cards which are used in computer Different types of motherboard, controller cards, display cards, sound card AGP cards FAX/Modem Cards, TV Tuner Cards, LAN Cards, Ethernet cards	2	2
5	Introduction to Number Systems (Decimal, Binary, Octal, Hexa)	2	
6	Booting concept of computer in DOS and Windows environment		2
7	BIOS setup utility and configuring the BIOS like booting sequence, system date, setting administrative password, USB		4

	enabling etc.		
8	Formatting and partitioning of HDD		4
9	Installation of Operating System i.e. DOS/Windows, Off-line drive installation / online drive Installation/Pen Drive bootable		8
10	BIOS password break / Administrative password break		2
11	Driver backup/restore, Data recovery	4	
12	Application types of application software and their Installation		4
13	Antivirus Software Installation/ different types of Antivirus Software/ Protect PC from Virus		2
14	Installation of multiple Operating System in a computer		4
15	Hard Disk drive installation and configuration setting, Use of CD ROM and DVD Drive		4
16	Power supplies installation and troubleshooting, Different types of SMPS identifications	2	2
17	Different types of monitors, Monitors, Mouse, Keyboard Repairing / Maintenance	2	2
18	Trouble shooting of different types of faults, Different computer cards identifications and troubleshooting		6
19	Different types of printers and their usage	4	
20	Repairing of different types of printers (LaserJet, inkjet etc.)		6
21	Antivirus and its current trends. Configuration and maintenance of virus protection programme	2	
22	Running of Scan disk and Disk defragmenter as part of preventive maintenance		2
23	Patches /service pack in Windows and its update in both.		2
24	Understand the beep codes error during POST, running of diagnostic tools		4
25	Preventing, Maintenance and Cleaning, servicing of computer	2	
26	Networking Concept, advantages, Network topologies, Types of networks, OSI model	2	
27	Networking Components - switches, bridges, routers, Gateways etc.		2
28	Transmission media- Guided media and Unguided media	2	
29	Crimping of cables straight cable, cross cable		2
30	IP configuration and working with various protocols, Installation of Network card in system and connecting system in LAN		6

31	Software based Firewall Installation & understanding firewall	1	3
	logs, virtual private network, VoIP		
	SOLAR TECHNOLOGY		T
1	Introduction to Solar PV Installer	2	
2	Basics of solar and electrical energy: AC, DC, Earthing, Circuit	3	
	Designing, Related laws and formulas		
3	Basics of solar photovoltaic System: Components, types, Sun	4	
	path Diagram, Technical parameters and performance		
4	Tools and equipment used for solar PV installation		4
5	Site Survey for solar PV installation: Load assessment, site		6
	assessment, customer requirement		
6	Procure Solar PV Solar system components		3
7	Install Civil and mechanical parts of solar PV system: Mounting,		6
	equipment foundation, Install battery bank stand and inverter		
	stand		
8	Installation of electrical components of solar photovoltaic system:		6
	Install electrical components, conduits, cables, grounding system		
9	Test and commission solar PV system: Testing of solar array,		5
	continuity, charge controllers, battery, start up system		
10	Maintain solar photovoltaic system		3
11	Maintain personal health and safety at project site	2	
12	Customer orientation for a solar PV System: Demonstrate	2	
	working principle and hand over of documents		
	Major Project		25

## 3. Advance Diploma in Multimedia Animation (175 hrs)

## **Eligibility: GRADUATE (APPEARED/ PASSED)**

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S. No	Topic	Theory	Practi
		-	cal

		Hours	Hours
1	Computer Appreciation:	4	
	What is a computer, basic structure of computer, data representation in computer [Binary number system, Hexadecimal number system, Binary to Decimal Conversion, Decimal to Binary Conversion, Binary Coded Decimal (BCD) Code, ASCII Code, UNICODE, representation of visual data.		
2	Computer Organization:	9	2
	Central Processing Unit		
	Fundamentals of Control Unit, Arithmetic Unit, Instruction Set, Register. Concept of Processor Speed, illustration with popular processors. Basic introduction to GPU		
	Memory and Storage		
	Memory Organization, RAM., Read Only Memories, Flash memory. Basics of other storage devices – HDD, CD/DVD, Blue-Ray, magnetic tape etc.		
	Input Devices		
	Keyboard, Mouse, microphone, trackball, joystick, Scanner. OMR, Bar/QR-code reader, MICR Digitizer, Card Reader, cameras, fingerprint scanner and other biometric devices, tablets etc.		
	Output Devices		
	Display (CRT, LCD, LED), Printers - Dot matrix, Inkjet, laser, Plotters, Projector and visualiser,		
	Ports and Interfaces		
	Serial and Parallel ports, Connectors: DIN, RCA, AV; USB, Fire wire (IEEE1394), HDMI		
	Computer Software		
	Relationship between Hardware and Software; System Software, Application Software, compiler, assemblers, linkers, loaders		
3	Introduction to Multimedia: Definition of Multimedia, Multimedia objects: Text, Graphics, Animation, Audio, images, Video. Definition of HyperText and HyperMedia. Multimedia Applications in Education, Entertainment. Advertising world etc. Components of a Multimedia System, Desirable	4	

	Features for a Multimedia System, requirements of Multimedia Communication		
4	Representation of Multimedia Objects:	10	
	• Representation of Analog Signals, A/D: Sampling and quantization		
	• Text: Font and their representation (bitmap, true type)		
	Graphics: Raster & Vector representation, aliasing problems		
	• Image: (bit depth, resolution, color (RGB, CMYK, HSB), introduction to BMP, GIF, TIFF, PNG and JPEG formats)		
	• Audio (speech and wideband audio, sampling rate and aliasing, quantization, introduction to MP3, WMA, WAV, MIDI etc.)		
	• Video (frame rate and resolution, interlaced and non-interlaced video, colour planes (YCBCR, YUV), Video broadcast standards (PAL, NTSC, SECAM), HD Video, 3D TV, Video representation: AVI, MPEG, Quick Time, real video (.rm)		
5	Concepts of Multimedia Editing:	2	8
	Digital Audio, Music Sequencing and Notation, Image/Graphics		
	Editing, Video Editing (Linear, Non-linear), Subtitling		
6	Introduction to Compression Technology: Concept of lossy and lossless compression, Concept of rate-distortion	3	3
	characteristics, Basics image compression (JPEG, JPEG 2000), Basics		
	of Audio compression (MP3, MP4), Basics of Video Compression		
	(MPEG, H.264)		
7	Multimedia Application Design: Content design, technical design, visual design, design metaphors,	2	8
	example studies, interactivity		
8	Multimedia Authoring and Publishing:  Definition of an Authoring System, uses of an authoring system,	5	15
	Definition and function of Authoring Metaphor, Different Metaphors.		
	Offline Publishing: Flash, Power Point		
	Online Publishing: HTML5, Dreamweaver		
9	Multimedia Processing Techniques:	2	
	Definition of Image, Raster Graphics, Vector Graphics, Digital Image		
	Representation, Bit allocation for intensity range.		
10	Digital representation of Color: Basic color models (RGB, CMYK, HSV) and their use color	2	
1			1

	Characteristics, Color Palette, Monitor vs Print Display.		
11	Introduction to MIDI:	2	
	Definition, MIDI Interfaces, MIDI Instruments, MIDI file structures,		
	MIDI file formats		
12	Image Editing: (Photoshop as reference software tool)	4	20
	Masks and Channels: Working with masks and channels, Creating a quick mask, Editing a		
	quick mask, Saving a selection as a mask, Editing a mask, Loading a		
	mask as a selection and applying effects, Creating a gradient mask,		
	Loading the gradient mask as a selection and applying effects.		
	Retouching and Repairing:		
	Using the Clone Stamp tool for repair, Using the Pattern Stamp tool to		
	create, Using the Healing Brush and Healing Patch to repair flaws,		
	History palette and snapshots.		
	Painting and Editing:		
	Using the Photoshop paint engine, Using blending modes, Painting		
	shadows and highlights, Smoothing the edges of strokes, Using the		
	History Brush and the Art History Brush, Brush palette, Painting with		
	specialty brushes, Using the Color and Swatch palettes, Adding brush		
	libraries, Saving customized preset brushes, Image and canvas size,		
	Creating and painting with custom brushes, Pattern Maker filter.		
	Basic Pen Tool Techniques:		
	Drawing paths with the pen tool, Drawing straight paths, Drawing		
	curved paths, Combining straight and curved lines, Drawing a path		
	around artwork, Using keyboard shortcuts		
	Creating Special Effects:		
	Automating multi-step tasks, Playing and batch-playing actions, Using		
	guides, Saving and loading a selection, Hand-coloring selections on a		
	layer, Combining and moving selections, Colorizing a selection,		
	Adjusting color balance, Applying filters, Creating a cutout effect,		
	Improving performance with filters.		
13	Image and Graphic Pattern Generation:		10
	(Adobe illustrator & Indesign as reference software tool)  Creating Basic Shapes:		
	Citating Dasit Snapts.		

Setting up the document, Using the tools, Drawing shapes, Painting artwork, Copying & scaling shapes, Painting, Filling with color, Stroking with color, Building a custom palette, Copying paint attributes, Saturating colors, Painting with patterns and gradients, Painting with a pattern brush, Drawing with the Pen, Drawing straight lines, Drawing curves, Editing curves.

#### **Working with Brushes:**

Using the Art Brushes, Using Scatter Brushes, Changing the color attributes of brushes, Using a fill color with brushes, Using Calligraphic brushes, Using Pattern brushes, Using Pattern brushes, Creating brushes.

## **Transforming Objects:**

Scaling objects, Rotating objects, Distorting objects, Changing the perspective, Using the Free Transform tool, Making multiple transformations.

### **Blending Shapes and Colors:**

Creating a gradient fill, Adjusting the direction of the gradient blend, Adding colors to a gradient, Creating smooth-color blends, Blending intermediate steps, Modifying the blend, Combining blends with gradients, Creating Shapes with the Pathfinder, Uniting shapes, Removing shapes to create a new object, Intersecting objects, Trimming objects, Blending colors with the Soft Mix command, Blending colors with the Hard Mix command, Dividing shapes with the Divide command.

#### **Creating Layers:**

Moving objects and layers, Locking layers, Viewing layers, Pasting layers, Merging layers.

#### **Creating Watercolor or Airbrush Effects:**

Setting Smart Guide preferences, Painting with the gradient mesh tool, Specifying the number of mesh lines, Applying colors to the mesh, Highlighting a mesh object, Editing mesh points, Reflecting mesh objects, Modifying mesh lines.

## **Drawing Cylinders and Boxes:**

Drawing three-dimensional objects, Drawing Cylinders, Drawing boxes.

	Major Project		0
	-,		25
	Mini Project		10
	navigation.		
	Layout Designs. Human Computer Interaction, Hypermedia &		
	and Effectiveness of Storyboards, Flowcharts, Writing a script, Screen		
17	Application Examples/ Case studies: Need for design, Design Specifics, Scripts, Storyboards, Advantages	2	6
	track/Special Effects/ Camera tracking/ Compositing.		_
16	VFX : After Efects Tools: Chroma (Green Screen/ Blue Screen) cut/Rotoscoping/ Motion		5
	working with clips, Editing techniques, Transitions, Video Effects.		
15	Video Editing: (Adobe Premier as reference software tool) Introduction to video editing tools, Importing and capturing projects,		8
	Dubbing.		
	files, Editing sound files, adding effect, Recording sound clips,		
14	Sound Editing: (Sonic Sound forge as reference software tool) Introduction to Sound editing software, Working with existing sound		4
	an image map to URL's.		
	Exporting continuous- tone and gradient artwork, Linking objects in		
	Preparing Graphics for Web Publication: Optimizing images for the Web, Exporting flat-color artwork,		
	Replacing a placed image.		
	image, Masking an image, Sampling colors in placed images,		
	Photoshop file, Copying a placed image, Adjusting color in a placed		
	Combining Photoshop & Illustrator, Vector vs. bitmap, Placing a		
	two-color illustrations, Creating a trap, Overprinting objects,		
	Document info command, Creating Color separations, Working with		
	Printing Artwork & Producing Color Separations: Overview of printing, Color management, Printing B&W proofs,		

# 4. Field Technician Air Condition & Refrigerator (175 hrs)

# Eligibility: GRADUATE (APPEARED/ PASSED)

S.NO	Topic		Practic al (HOUR S)	
1	Introduction & Job Responsibilities: Introduction Importance of RACW Trade, Scope of job and Industry overview Safety Work Rules, Safe work environment, safety equipment, Service precautions at workshop and at Customer's	8	8	
2	Measurement Systems:  Measurement Systems, CGS, MKS, FPS, SI Units, States of Matter, Atomic Structure, Active, Passive Components, Conductors, insulator, Semi-Conductors, Resistance, Capacitance and Inductance, Series and Parallel circuits, Ohm's law, Kirchoff's Laws, Electrical and Electronic symbols, Transistors, Triacs, MOSFETs, AC, DC Circuits, Earthening, Voltages, Work, Power and Energy, Electrical Consumption, Watts, Transformers, Motors- AC and DC, Transducers, Sensors, Switches, Pressure sensors, Valves, Voltage Flow	13	22	
3	Attend to Service Complaints – Refrigerators: Refrigeration- types, application, Vapour Compression, Main Components, Heat Exchanger, Heat Flow, Heat and temperature, various temperature scales, Concept of absolute zero, Conduction, Convection, Radiation, Specific, Latent and Sensible Heat, Pressure, Refrigeration Cycle, Types and uses of a refrigerator, DC, FF and SBS Refrigerators, Ozone Layer, Refrigerants, Gases used in Refrigerator, their chemical composition, CFC and Non CFC Gases, How a refrigerator works	19	15	
4	Attend to Service Complaints – Airconditioners:  AC, Types, Refrigeration cycle for AC, Refrigerants, Lubrication	10	15	

	, Oils , storage, cylinder colour codes , Environment safety ,		
	Thermal Properties of Gases, Boyle's and Charles' Laws,		
	Concept of Ton of Refrigeration, Capacity, Compressor-Rotary,		
	reciprocating, how they work, Why they fail, Precautions,		
	Condensers, evaporators, Blowers, Driers, Filters, Relays		
	Electro mechanical parts, Refrigerants, BTU, EER, Star Rating		
	BEE Rating, E waste, parts of WAC and SAC		
	Use of Tools:		
	Tools and equipment and handtools, use, care, safety, symbols		
	Use of Multimeter, Megger, Clamp Meter, Tools required,		
	Checking of voltages and Current, Wiring Diagram, Vaccum		
	Pump, Gauge, Digital Weighing Balance, checking of		
	individual parts Installation of SAC, Comfort zone for		
5	human, Flaring and Swaging, Brazing, Flux, Heat Load,	12	20
	Installation of IDU and ODU, Fixing of wall mount plate, Choice		
	of pipes' material, Height of ODU, Site for ODU, U-Trap,		
	Faults and Rectification, Gases used in AC, their chemical		
	composition, Leak Test, Flushing, Uses of Nitrogen, Brazing,		
	Types of flames, Material of Brazing Rod, Reasons for choice of		
	this material, quality standards to be followed		
	Do's and Don'ts:		
	Common mistakes by technicians Faults and Fault Finding		
	Techniques- WM, Ref, Split and Window AC Faults WM-	0	1.5
6	Dead, No wash, No spin, Vibrations, PCB Faults Ref-Dead, No	8	15
	cooling, Less Cooling, Noise formation, Vibration sound		
	AC-Dead, Stand by, No Cooling, Less Cooling, Extra Sound		
	when on, choking, moisture, low refrigerant, gas leak		
	Soft Skill:		
	Manners and Etiquettes, Behavior on phone, Dressing Sense,	4.0	
7	Personal Hygiene, Presentation Skills, People Skills,	10	
	Handling difficult people and situations, Avoiding gaudy wear, Method of speaking, Language and Tone, Maintaining distance		
	while speaking, Body Language		
L	1		

# 5. Field Smartphone Repair Technician (175 hrs)

## **Eligibility: GRADUATE (APPEARED/ PASSED)**

S.NO	Topic	Theory (HOURS)	Practic al (HOUR S)
	Introduction & Job Responsibilities :		
1	Introduction Importance of Smart Phone Repair Trade, Scope of job and Industry overview, Safety Work Rules Safe work environment, Sse of safety equipment, Service precautions at workshop and at Customer's Premises	8	8
2	Basic Electricity & Electronics:  Basic Electricity, Voltage current, Watt, Frequency, Ac & DC Voltage, Resistance, Capacitor, Inductor, Series & parallel Circuit, Ohm's law conductor, Insulator & semiconductor Atomic theory of conductance, semiconductor theory Doping of semiconductor material, P - type & N-type material  P-N Junction, diode, Transistor Biasing  Electronics Symbol Tr, Diode, and other components  Identification of electronics components, Reading of value & measurement Various Type of Electronics circuit, rectifier, amplifier, switching, Filter, etc  Digital electronics Logic gate, counter, shift register,  Microprocessor	19	25
3	Mobile Theory & Practice: Introduction to Mobile Telephone System. Telecommunication in India Mobile Generation GSM Concept SIM CARD, IMEI NO Study of different Mobile Handsets Study of Mobile Handset Block Diagram Study of each section function Study of Various components, Speaker, Receiver, Ringer, Display Unit, PCB, etc Study of Mobile Battery, Li-ion Battery, polymer battery, Measuring & Testing mobile parts Disassembly & Assembly Of Mobile Phone Study of Circuit Diagram of Different company make mobile phone. Study of Mobile PCB Tracing & indentifying various sections and Components. Discussion on common fault & how to rectify them Trouble Shooting of Mobile phone/smart phone Study of various Mobile O S system O S Installation process Study of software based mobile diagnostics tools.	24	25

4	Handling of Tools & Jigs: Handling of mobile repair tools Measuring of Voltage, Current, Resistance Using Digital Multimetre Soldering, SMD Rework Station, BGA IC rework tools ESD, ESD Safe tools, Type of Solder, Lead & Non Lead Solder, soldering process using normal & Tem controlled Solder Iron Soldering & Desoldering Practice SMD Rework practice	9	22
	BGA Rework practice Trouble Shooting of Mobile phone/smart phone using Computer Based diagnostic tools		
5	Attending Service Complain: Talk with customer to understand customer problem/requirement Ensure backup of customer data Inform customer Aprox Cost and time to repair the faulty unit. Inform customer about company policy and warranty terms & condition Maintain TAT Handel customer unit with care no scratch should be on the unit Inform customer after completion of work after entering in the company CRM	8	5
6	Do's and Don'ts: Common mistakes by technicians Faults and Fault Finding Techniques- Various Smart Phone Data Back UP, Always inform customer Always use ESD safe Tools Always company Authorized Parts Safe Disposal of E-waste	6	5
7	Soft Skill:  Manners and Etiquettes, Behavior on phone, Dressing Sense, Personal Hygiene, Presentation Skills, People Skills, Handling difficult people and situations, Avoiding gaudy wear, Method of speaking, Language and Tone, Maintaining distance while speaking, Body Language	6	5

# Annexure –II APPLICATION FORM

1	Training Center name	
2	Training Center Location	District:
		City/Village:
		Address:
		Contact Person Mobile No:
3	Full details of Centre In Charge  a) Name b) Centre Address c) Telephone No. d) Mobile No. e) E-Mail: f) Fax No. g) NIELIT Accreditation No: or ESDM TP ID: or NIELIT Facilitation No: or WIL Registration No: or CSC Number:	
4	Complete Address of the Centre with brief description of location	
5	Experience in conducting NIELIT courses (Mention the Course names etc.)	
6	Hardware Availability	Attach details
7	Software Availability	Attach details
10	Faculty Profile	Attach details

#### **DECLARATION:**

i.	I,son
	daughter/wife of have read and understood the
	GUIDELINES / INSTRUCTIONS FOR CONDUCTING THE COURSE and agree
	to abide by the same.
 11.	I certify that I am the competent authority, by virtue of the administrative and
	financial powers vested in me by to furnish the above
	information and to undertake the above stated commitment on behalf of the

iii. I am aware that in case any information given by me is found false or misleading my organization would be debarred from the conduction of the course besides being subjected to any other action that may be deemed fit by NIELIT, Kolkata.

organization referred to in col.1 above.

- iv. The details furnished with regard to faculty and infrastructure is correct to the best of my knowledge and belief and we will ensure availability of these facilities on a continued basis till we continue to offer candidates the courses applied for.
- v. I agree to abide by the decisions of the NIELIT, Kolkata or its designated agencies in respect of my application for permission to offer candidates for the courses conducted by NIELIT, Kolkata
- vi. I agree to all terms & conditions mentioned in the EOI Ref no: NIELIT/KOL/EOI/2019/02/450 dated 26/09/2019

Signature of the Witness:	Signature of the
	Authorized Signatory:
Name:	Name:
Designation:	Designation:
Date:	Date:
Address:	Address:
Seal of the organization	Seal of the organization

## Annexure -III

To
The Director,
NIELIT Kolkata
Jadavpur University Campus

Name of the	Concurrence for	Concurrence for	Concurrence	Concurrence to	Concurrence
Course	Conduction of	Students' fees	for	complete the	for ability by
	Course (Y/N)	Collection and	remuneration	procedures laid	the rules &
		Payment to	(Y/N)	down by NIELIT	regulation
		NIELIT Kolkata		Kolkata (Y/N)	(Y/N)
		(Y/N)			
Diploma					
(150 Hours)					
Advance					
Diploma (175					
Hours)					

I do hereby declare that I agree to all terms & conditions mentioned in the EOI Ref no: NIELIT/KOL/EOI/2019/02/450 dated 26/09/2019 and all the statements made above are true and correct and I have given consent in full sense and without any influence. In case of any deviation NIELIT Kolkata may take appropriate action.

Signature of the Witness:	Signature of the	
	Authorized Signatory:	
Name:	Name:	
Designation:	Designation:	
Date:	Date:	
Address:	Address:	
Seal of the organization	Seal of the organization	