

INSTITUTE OF HUMAN RESOURCES DEVELOPMENT SHORT TERM COURSE FOR HIGH SCHOOL STUDENTS

VTP01 Vacation Training programme on Computer Basics & Skills

(Scheme: 2016)

Total Duration: 25 Hours(2 weeks) Eligibility: Class VIII,IX,X Course fee: Rs. 2,000/-

Overall Objective: To impart basic ideas & practical skills in computer basics and skills in word processing, presentations, networking and image editing.

1. Introduction

Block diagram - Functional units - Hardware - Software - Concept of Binary number system - Types of computers - Desktop, Server, Laptop, Palmtop, Concept of machine, assembly & high level languages, Over view of the basic components - CPU- Keyboard - Mouse - Display - RAM & ROM-Secondary Storage devices- Operating System - Boot strapping - POST - purpose of OS (2 Hrs)

2. Working with Operating System (Windows/Linux)

Familiarisation of Windows Desktop, Folder & File manipulation, Understanding file formats, Windows utilities-Notepad, Paint, CD/DVD Burning, Working with Sound and movie files-Sound recorder-playing movie and audio files, Transferring files through USB using HDD/Flash drives/Memory cards/Smart phones, User Account creation, Power options-Installing and removing programs — Device manager-Installing and using printer-Virus protection — Firewall — Malware-Adware-Spyware — Disk Maintenance- Defrag (5 Hrs)

3. Introduction to Word Processing

Basic Formatting, Layout, Text, Paragraph Styles and Formatting, Finding and Replacing Text, Editing and Proofing Text, Spell check and correction, Grammar check and correction, How to add picture to the documents, Table Handling Formatting the Tables, Inserting, filling and formatting a table (5 Hrs)

4. Introduction to presentations

Make presentations, Create a new slide Add slides and Create a Slide master ,Changing layout for slide ,running a slide show, Saving a presentation ,changing the order of slides , changing the coloring scheme , change background , Adding transitions to slides, special effects, slide timings setup, Add tables and charts, Insert a picture, Insert audio and video, Add motion path, Edit motion path, Remove animation (5 Hrs)

Networking and Internet

Networking Concepts-Network Switches, Network cables(UTP Cat5/Cat6), RJ45 Connector, Information Outlet, Types of Internet Connections-Dial-up-Fixed Broadband-Mobile Broadband-Wireless Hotspots, Internet address, www, browser, Search Engines, Search Techniques, email, Blog, Facebook, Twitter, YouTube, Cyber attacks-spam-phishing, Cyber Law, Cyber Security (2 Hrs)

5. Basics of Image Editing

Loading Image, Resolution, Colour modes, Foreground and Background Colour, Familiarisation of Tools, Cropping, Filters, Transformation Working with layers, Managing Text.

(5Hrs)

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VTP02 Vacation Training programme on Fundamental & Hobby Electronics (Scheme: 2016)

Total Duration: 25 Hours(2 weeks) Eligibility : Class VIII,IX,X Course fee: Rs. 2,000/-

Overall Objective: To impart basic ideas regarding working and production of simple electronic application circuits in daily life.

Module I Electronic Components

Duration 5 Hours

Lecture/Demonstration:

2hours

Practical

3 Hours

Objective: To enable the student to identify and understand the operational features, part numbers and ratings of basic commonly used electronic devices

Contents:

Passive Components- Resistors(types, rating, colour code), Capacitors(types, rating, Obtaining values) Transformer(Types, ratings)

Active Components- Diodes(Types- Signal diode, LED, Zener, photodiode; Typical available part numbers; Ratings; Structure & Working (operational aspects only))

Transistors (Types- npn, pnp; Typical available part numbers; Ratings)

Special devices- Seven Segment LED display (Types, Part numbers),LDR, Optocoupler, Relay (Typical available part numbers; Ratings, Structure &Working (operational aspects only)), Simple DC motors(Typical available part numbers; Ratings), Buzzer

Module II Electronic Test and Measuring Instruments

Duration 5 Hours

Lecture/Demonstration2hours

Practical

3 Hours

Objective: To enable the student to handle common Electronic test and measuring instruments

Contents:

Digital Multimeter: Uses, General Specifications, Measurement of Current, Voltage, Resistance, Component Checking and lead identification of Diode, Transistor, Transformer

Function Generator:

Uses, Operation

CRO: Uses, General Specifications, Display of waveforms, Measurement of Voltage and Frequency.

Bread Board: Use, Wiring simple circuits on bread board

Module III Electronic Product Fabrication Techniques

Duration 5 Hours

Lecture/Demonstration2hours

Practical

3 Hours

Objective: To enable the student to understand and carry out primitive electronic product fabrication techniques

Contents:

PCB: Types, PCB lay out, Developing a negative of a PCB lay out, Etching,

Drilling (Basic ideas for simple circuits)

Soldering: Soldering Iron- Ratings, Types; Solder- Composition, types; Flux; Soldering Practice; Desoldering Pump(Use and Practice)

Module IV Fundamental Electronic Circuits

Duration 5 Hours

Lecture/Demonstration2hours

Practical

3 Hours

Objective: To enable the student to understand the basic operation of fundamental electronic circuits

Contents:

Rectifier: Full wave bridge rectifier(Circuit, working, Realisation on bread board and a general purpose PCB)

Transistor as Switch(Circuit, Working(operational aspect only), Experimenting on a breadboard Transistor as an amplifier: (Circuit, Working(operational aspect only), Experimenting on a breadboard

Astable multivibrator using transistors: (Circuit, Working(operational aspect only), Experimenting on a breadboard

Module V Electronic Product Development

Duration 5 Hours

Practical

5 Hours

Objective: To enable the student to conceive develop and implement a simple electronic product Contents:

The student should be guided to conceive a practical electronic circuit related to his/her daily life situations, generate a circuit, test its operation and finally prepare it as a finished product. At this stage the student may be introduced to application of ICs such as 555, CD4047 PLL IC, Voltage Regulator ICs, Amplifier ICs etc depending on the caliber of the student.

Eg:- Electronic mosquito repeller
LED torch/bulb
Water Level Indicator/Controller
Dancing Lights etc

Small display circuits

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VTP03 Vacation Training programme on English Communication & Soft Skills (Scheme: 2016)

Total Duration: 25 Hours(2 weeks) Eligibility: Class VIII,IX,X Course fee: Rs. 2,000/-

Overall Objective: To impart basic ideas in English Communication, soft skills and create an awareness in Career opportunities.

1. English Communication & Soft Skills

Communication Skills- Basic English Grammar, Non-Verbal-body language-gestures-postures-voice modulation, Vocabulary Building and Vocabulary Building Activities, Pronunciation(accent neutralization), Non-verbal-Debate-Paraphrasing - Discussion-Role play-Extempore-Public speaking

Report Writing-Creative Writing, Email Writing, Notices & Advertisements, Group Dynamics-Team building, Test anxiety, Enhancing academic performance, Time management, Positive Attitude, Self Esteem.

(22 Hrs)

2. Career Guidance (What after Plus Two & What after Tenth)

How to choose right career options, Various job related professional courses in India and Abroad, Various other courses and higher education options in India and Abroad

(2 Hrs)

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