I.I SEMESTER SYLLABUS

COMMUNICATING EFFECTIVELY IN ENGLISH

L T P
3 – 2

Rationale

Interpersonal communication is a natural and necessary part of organizational life. Yet, communicating effectively can be challenging because of our inherent nature to assume, overreact to and misperceive what actually is happening. Poor communication or lack of communication is often cited as the cause of conflict and poor teamwork. In today's team-oriented workplace, managing communication and developing strategies for creating shared meaning are crucial to achieving results and creating successful organizations. The goal of the ***Communicating Effectively in English*** course is to produce civic-minded, competent communicators. To that end, students must demonstrate oral as well as written communication proficiency. These include organizational and interpersonal communication, public address and performance.

Objectives of Course in Communicating Effectively in English for the First Year (I & II Semesters) are:

** Understanding how communication works*
** Gaining active listening and responding skills*
** Understanding the importance of body language*
** Acquiring different strategies of reading texts*
** Increasing confidence by providing opportunities for oral and written expressions*

DETAILED CONTENTS FOR FIRST SEMESTER

I SEMESTER 48 HRS

1. COMMUNICATION SKILLS 6 hrs

1.1 Verbal and Non-verbal Communication

1.2 Process of Communication

1.3 Barriers to Communication; Overcoming Strategies

1.4 Listening and Speaking Skills and Sub-Skills

2. Spoken English-Introduction, Features of Spoken English

(Note: This module is only for practice. This should not be included in the final examination)

2. DEVELOPING ORAL COMMUNICATION SKILLS 8 hrs

2.1 Greeting, Starting a Conversation

2.3 Introducing Oneself

2.4 Introducing Others

2.5 Leave Taking

2.6 Thanking, Wishing Well

2.7 Talking about Oneself

2.8 Talking about Likes and Dislikes

3. GRAMMAR AND USAGE 12 hrs

3.1 Punctuation

3.2 Articles-a, an, the

3.3 Framing Questions

3.4 Verbs-Classification: Main Verb, Auxiliary Verb, Transitive & Intransitive Verbs, Phrasal Verbs

3.5 Word Formation

4. WRITING SKILLS 10 hrs

4.1 Writing Paragraphs

4.2 Picture Composition

5. READING SKILLS 12 hrs

5.1 Vocabulary Enhancement

5.2 Techniques of Reading: Skimming, Scanning, Intensive and Extensive Reading

NOTE: The Reading Skills of the learners (along with vocabulary enhancement) will be through reading thematic articles/essays and/or stories.

Section I

Theoretical Concepts of Communication Skills

Section II

Oral Communication Skills

Section III Reading Skills

Section IV

Writing Skills

Section V

Grammar and Usage

1.2 LIBRARY AND SOCIETY - I

L	T	P
3	-	3

RATIONALE

After completing the course the student should be able to understand the role of library in the society, role of various types of libraries and information centres in collection, organization and dissemination of information. To help the students to understand the role of information centres and libraries in society this subject is introduced in the curriculum.

DETAILED CONTENTS

1. Concept of library in society: its objectives, functions and role of library in the development of society. (6 hrs)

2. Types of Libraries: Public, Academic, Special, National - their role, functions and objectives (12 hrs)

3. Laws of Library Science and their implications (16 hrs)

4. Development of libraries in India after independence (4 hrs)

5. Library legislation: Introduction, objectives, functions and factors governing library legislation. (10 hrs)

LIST OF PRACTICALS

1. Visit to various types of libraries and preparing their reports
2. Establishing contact with different group of readers
3. Making charts

RECOMMENDED BOOKS

1. Dutta, D.N, Libraries and their uses: A guide for users, Calcutta. The world

2. James Clarke Libraries and Society. London, 1969

3. Kumar PSG., Indian Library Chronology, New Delhi, Metropolitan, 1977

4. Mukerjee, AK, Librarianship: Its philosophy and history, Bombay, Asia, 1966

5. Khanna, JK, Library and Society

6. Ranganathan, SR, Five laws of Library Science, Bombay Asia, 1963

7. Rosa G. Scientific Information and Society Latest Edition

8. Saini OP: Library and Society (Hindi) YK Publishers, 2001, Agra

9. Tripathi SM; Library and Society (Hindi) YK Publishers, Agra

10. Sharma, SK Pushtkalaya Avam Samaj; Jain Publishers, Delhi

1.3 REFERENCE AND INFORMATION SERVICE - 1

L T P
4 - 3

RATIONALE

In the times to come libraries will not longer be engaged only in acquisition, organization and circulation of documents. They will be the centers for dissemination of information. In order to do so knowledge about sources of information, methods of retrieval and dissemination of information etc need to be given to the students. Hence this subject is introduced in the curriculum.

DETAILED CONTENTS

1. Reference and Information Service: Concepts, definitions, importance and purpose. (6 hrs)

2. Laws of library science: implications for reference service (6 hrs

3. Types of reference and information services (8 hrs
   - Library Orientation
   - Ready reference service
   - Long range reference service

4. Reference and information sources – characteristics and evaluation (8 hrs
5. Qualities and qualifications of reference librarian (4 hrs
6. Detailed study of the following reference and information sources (32 hrs)

   Encyclopaedia
   - ¾ Encyclopedia Britannica
   - ¾ Encyclopedia of library and information science

   Dictionaries
   - ¾ Webster's third new International Dictionary of the English language
   - ¾ Comprehensive English - Hindi dictionary
   - ¾ India: a reference annual

   Biographical Sources
   - ¾ India's who's who

   Educational Sources
   - ¾ World of learning
   - ¾ University Handbook of India

Geographical Sources
- ¾ Lippincott Gazetter
- ¾ Gazette of India

Sources of Current Information
- ¾ Kissing's record of world events

LIST OF PRACTICALS

1. Evaluation of reference tools (specified in the list) in each category
2. Practice in solving of reference questions from the list in each category
3. Practice in solving short range and long range reference enquiries

Note: A proper record of practical work is to be maintained by each

student**. RECOMMENDED BOOKS**

1. Cheney, Frances Neel, Fundamental reference sources, Chicago ALA, 1971.
2. Guha, B., Documentation and its facets.
3. Ghosh GB and Banerjee BN, Trends of Information service in India, Calcutta.
The World, 1974.
4. Krishan Kumar, Reference Service, New Delhi, Vikas Publishers, 1982
5. Kawatra PS, Fundamentals of Documentation, New Delhi; Sterling, 1980
6. Katz, William, Introduction to Reference Work, 7th Edition, 2 V, New York, McGraw Hill, 1995
7. Mukherjee AK, Reference Work and Its Tools, 2nd Ed., Calcutta, The World
1971
8. Ranganathan SR, Reference Work and Its Tools, 2nd Ed. Calcutta, The World,
1971
9. Shores Lovias, Basic Reference Sources, Chicago ALA, 1954
10. Winchell, Constance M, Gide to Reference Books 8th Edition, Chicago ALA, 1967
11. Krishna Subramanyam, Scientific and Technical Information Resources, New
York, Marcel Dekker, 1981
12. Tripathi, SM., Reference and Information Service: New Dimensions (Hindi), , Agra
13. Khanna JK., Documentation and Information Services: Systems and Techniques, YK Publishers, Agra, 1999

1.4 LIBRARY CLASSIFICATION - I

L T P
2 - 5

RATIONALE

The basic function of a library is to arrange books, periodicals and other reading materials in helpful sequence to facilitate easy retrieval. Classification is the devise by which helpful sequence is obtained. The knowledge of various types of classification and the methods of classifying book and non-book materials is therefore included in the curriculum through this subject.

DETAILED CONTENTS

1. Library classification: Definition, need and functions (6 hrs
2. Main features of DDC. (8 hrs
3. Difference between knowledge classification and book classification. (6 hr
4. Salient features of of library classification/book classification (6 hrs)
5. Notation: Definition, Need of notation, Purpose, Functions, Types and Qualities of good notation (6hrs)

LIST OF PRACTICALS

Classification of books involving main classes, subjects by D.D.C Relevant theory instructions during the practical may be given (simple cases only).

RECOMMENDED BOOKS

1. Balty, CD, Introduction to Colon Classification, Bombay, Asia, 1967.
2. Introduction to 21st ed. Dewey Decimal Classification, Bombay, Asia 1965.
3. Bhargava, GD and Sood SP, Colon Classification, Theory and Practice, Ujjain, Vijay Prakash, 1975.
4. Parkhi, RS, Decimal classification and colon classification in perspective Bombay, Asia, 1964 VII, 526
5. Ranganathan SR, Colon Classification, 6th rev. ed. Bombay Asis, 1966.
6. Tripathi, SM and Shokeen NS; Fundamentals of Librarcy Classification (Hindi) YK Publishers, Agra, 1999

7. Sharma, UC, Shokeen, NS and others, Colon Classification Practice (Hindi); YK Publishers Agra, 2003

8. Gautam JN and Niranjan Singh; Dewey Decimal Classification Practice (Hindi); YK Publishers, Agra, 1998

9. Ranganathan SR, Elements of Library Classification, 3rd Ed. Bombay, Asia 1969

10. Krishan Kumar, Theory of Library Classification Ed. 2, 1981

11. Raju AAN, Decimal, Universal Decimal and Colon Classification, 1984

12. Sachdeva, Mohinder Singh, Colon Classification, Theory and Practice, New Delhi Sterling 1975

13. Sayers W, Introduction to Library Classification, Ed. 9, London Grafton, 1958

14. Srivastava AP, Theory of Knowledge Classification in Libraries, New Delhi Lakshmi, 1964

15. Dewey Decimal Classification (Latest ed)

1.5 LIBRARY CATALOGUING - I

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RATIONALE

Along with classification, cataloguing is the most important techniques, which help quick retrieval of documents. A catalogue entry is the bridge between the users and the documents in library. Methods of cataloguing various types of book and serials by different cataloguing codes have therefore, to be taught in order to catalogue documents. Topics giving knowledge and skills of various types of catalogues, cataloguing codes and their practices have been included in the subject

DETAILED CONTENTS

1. Library catalogue: definition, need and functions (6 hrs)

2. Physical forms of catalogue (6 hrs)

3. Types of library catalogue (6 hrs)

4. Classified Catalogue and dictionary catalogue: Difference between classified catalogue and dictionary catalogue (6 hrs)

5. Kinds of entries and their functions, parts of entries according to AACR-II. Skeleton card of main entry according to AACR-IIR (8 hrs)

LIST OF PRACTICALS

1. Cataloguing of books according to AACR – IIR: Single personal author and joint authors, collaborators and pseudonym

   Relevant theory instruction are to be given to the students during the practicals

2. At least five titles are to be given for each problem, for which students are to keep a record.

RECOMMENDED BOOKS

1. AACR – II

2. Tripathi SM and Shokeen, NS; Fundamentals of Library cataloguing (Hindi); YK Publishers, Agra, 1999

3. Shokeen NS, Gupta, DK, Sharma, Sanjiv and Vijender Singh; Cataloguing Practice: CCC and AACR-II (Hindi); YK Publishers Agra, 2000

4. Girija Kumar and Krishan Kumar, Theory of Cataloguing 2nd Rev. Ed., New Delhi, Vikas, 1977

5. Ranganathan, SR; Theory of Lbrary catalogue, 1938

6. Ranganathan, SR; Classified Catalogue Code, 5th Ed., Bombay Asia

7. Ranganathan, SR, Cataloguing Practice, Assistant by G Bhattacharya, New York, Asia, 1974

8. Sengupta,Benoyendra and Kesvan BS; Cataloguing: its Theory and Practice, 3rd Ed. Calcutta, The World, 1974

9. Krisan Kumar; AACR – 2, New Delhi, Vikas 1990

10. Gautam, JN, and Niranjan Singh, Advanced Cataloguing Practice: CCC and AACR-2, YK Publishers, Agra, 1997

1.6 BASICS OF INFORMATION TECHNOLOGY

RATIONAL

Information technology has great influence on all aspects of life. Almost all work places and living environment are being computerized. In order to prepare diploma holders to work in these environments, it is essential that they are exposed to various aspects of information technology such as understanding the concept of information technology and its scope; operating a computer; use of various tools of MS office; using internet etc. form the broad competency profile of diploma holders. This exposure will enable the students to enter their professions with confidence, live in a harmonious way and contribute to the productivity.

Note:

1. *Teaching of theory should be dovetailed with practical work*
2. *The following topics may be taught in the laboratory along with the practical exercises.*

DETAILED CONTENTS

1. Information Technology – its concept and scope
2. Computers for information storage, information seeking, information processing and information transmission
3. Elements of computer system, computer hardware and software; data – numeric data, alpha numeric data; contents of a program, processing
4. Computer organization, block diagram of a computer, CPU, memory
5. Input devices; keyboard, mouse etc; output devices; VDU and Printer, Scanner, Plotter
6. Electrical requirements, inter-connections between units, connectors

and cables

7. Secondary storage; magnetic disks – tracks and sectors, optical disk (CD and DVD Memory), primary and secondary memory: RAM, ROM, PROM etc., Capacity; device controllers, serial port, parallel port, system bus
8. Exercises on file opening and closing; memory management; device management and input – output (I/O) management with respect of windows
9. Installation concept and precautions to be observed while installing the system and software
10. Introduction about Operating Systems such as MS-DOS and Windows
11. Special features, various commands of MS word and MS-Excel
12. About the internet – server types, connectivity (TCP/IP, shell); applications of internet like: e-mail and browsing
13. Various Browsers like WWW (World wide web); hyperlinks; HTTP (Hyper Text Transfer Protocol); FTP (File Transfer Protocol)
14. Basics of Networking – LAN,WAN, Topologies

LIST OF PRACTICALS

1. Given a PC, name its various components and list their functions
2. Identification of various parts of a computer and peripherals
3. Practice in installing a computer system by giving connection and loading the system software and application software
4. Installation of DOS and simple exercises on TYPE, REN, DEL, CD, MD, COPY, TREE, BACKUP commands
5. Exercises on entering text and data (Typing Practice)
6. Installation of Windows 98 or 2000 etc.

   (1) Features of Windows as an operating system

   - Start
   - Shutdown and restore
   - Creating and operating on the icons
   - Opening closing and sizing the windows

- Using elementary job commands like – creating, saving, modifying, renaming, finding and deleting a file
- Creating and operating on a folder
- Changing setting like, date, time color (back ground and fore ground)
- Using short cuts
- Using on line help

7. MS-WORD

- File Management:
  Opening, creating and saving a document, locating files, copying contents in some different file(s), protecting files, Giving password protection for a file
- Page Set up:
  Setting margins, tab setting, ruler, indenting
- Editing a document:
  Entering text, Cut, copy, paste using tool-bars
- Formatting a document:
  Using different fonts, changing font size and colour, changing the appearance through bold/ italic/ underlined, highlighting a text, changing case, using subscript and superscript, using different underline methods
- Aligning of text in a document, justification of document ,Inserting bullets and numbering
- Formatting paragraph, inserting page breaks and column breaks
- Use of headers, footers: Inserting footnote, end note, use of comments
- Inserting date, time, special symbols, importing graphic images, drawing tools
- Tables and Borders:
  Creating a table, formatting cells, use of different border

styles, shading in tables, merging of cells, partition of cells, inserting and deleting a row in a table

- Print preview, zoom, page set up, printing options
- Using Find, Replace options
- Using Tools like:

  Spell checker, help, use of macros, mail merge, thesaurus word content and statistics, printing envelops and lables
- Using shapes and drawing toolbar,
- Working with more than one window in MS Word,
- How to change the version of the document from one window OS to another
- Conversion between different text editors, software and MS word

8. MS-EXCEL

- Starting excel, open worksheet, enter, edit, data, formulas to calculate values, format data, create chart, printing chart, save worksheet, switching from another spread sheet
- Menu commands:

  create, format charts, organise, manage data, solving problem by analyzing data, exchange with other applications. Programming with MS-Excel, getting information while working
- Work books:

  Managing workbooks (create, open, close, save), working in work books, selecting the cells, choosing commands, data entry techniques, formula creation and links, controlling calculations, working with arrays
- Editing a worksheet, copying, moving cells, pasting, inserting, deletion cells, rows, columns, find and replace text, numbers of cells, formatting worksheet
- Creating a chart:

  Working with chart types, changing data in chart, formatting a chart, use chart to analyze data
- Using a list to organize data, sorting and filtering data in list
- Retrieve data with MS – query: Create a pivot table,

customising a pivot table. Statistical analysis of data

- Customise MS-Excel:

  How to change view of worksheet, outlining a worksheet, customise workspace, using templates to create default workbooks, protecting work book

- Exchange data with other application: linking and embedding, embedding objects, linking to other applications, import, export document.

9. Internet and its Applications

   a) Log-in to internet

   b) Navigation for information seeking on internet

   c) Browsing and down loading of information from internet d) Sending and receiving e-mail

   - Creating a message
   - Creating an address book
   - Attaching a file with e-mail message
   - Receiving a message
   - Deleting a message

RECOMMENDED BOOKS

1. Fundamentals of Computer by V Rajaraman; Prentice Hall of India Pvt. Ltd., New Delhi
2. Computers Today by SK Basandara, Galgotia publication Pvt ltd. Daryaganj, New Delhi
3. MS-Office 2000 for Everyone by Sanjay Saxena; Vikas Publishing House Pvt. vLtd., New Delhi
4. Internet for Every One by Alexis Leon and Mathews Leon; Vikas Publishing House Pvt. Ltd., Jungpura, New Delhi
5. A First Course in Computer by Sanjay Saxena; Vikas Publishing House Pvt. Ltd., Jungpura,New Delhi
6. Mastering Windows 95, BPB Publication, New Delhi

7. Computer Fundamentals by PK Sinha; BPB Publication, New Delhi

8. Fundamentals of Information Technology by Leon and Leon;Vikas Publishing House Pvt. Ltd., Jungpura, New Delhi

1.7 GENERAL WORKSHOP PRACTICE – I & II

RATIONAL

Manual abilities to handle engineering materials with hand tools need to be developed in the students. They will be using different types of tools/equipment in different shops for fabrication purposes. Besides developing the necessary skills, the students will appreciate the importance of quality and safety measures.

DETAILED CONTENTS

Note: 1. The students are supposed to come in proper workshop dress prescribed by the institute. Wearing shoes in the workshop(s) is compulsory. Importance of safety and cleanliness, safety measures and upkeep of tools, equipment and environment in each of the following shops should be explained and practiced. The students should prepare sketches of various tools/jobs in their practical Notebook.

2. The shops to be offered in I and II semester may be decided at polytechnic level
3. The students should be taken to various shops (not included in the curriculum) in the polytechnic in batches and should be given knowledge of the various machines/equipment. Such as machine shop, foundry shop, sheet metal shop, etc.
4. Students of Diploma in Chemical Engineering will undergo Shops 1 to 6 only

Following seven shops are being proposed:

1. **Carpentry shop**
2. **Fitting and plumbing shop**
3. **Welding shop**
4. **Paint shop**
5. **Forging and sheet metal shop**
6. **Electric shop**
7. **Electronics Shop**

1. Carpentry Shop

1.1 Introduction to various types of wood, carpentry tools - their identification with sketches. Different types of wood joints.

1.2 Simple operations viz. hand sawing, marking, planning

1.3 Introduction and sharpening of wood working tools and practice of proper adjustment of tools

1.4 Demonstration and use of wood working machines i.e. band saw, circular saw, rip saw, bow saw and trammels. Universal wood working machine and wood turning lathe

1.5 Making of various joints (Also draw the sketches of various wooden joints in the Practical Note Book)

a) Cross lap joint

b) T-lap joint

c) Corner lap joint

d) Mortise and tenon joint

e) Dovetail joint

f) Prepare a file handle or any utility items by wood turning lathe

2. Fitting and Plumbing Shop

2.1. Introduction to fitting shop, common materials used in fitting shop, description and demonstration of various types of work-holding devices and surface plate, V-block

2.2 Demonstration and use of simple operation of hack-sawing, demonstration of various types of blades and their uses

2.3 Demonstrate and use of all important fitting shop tools with the help of neat sketches (files, punch, hammer, scraper, taps and dyes etc.)

2.4 Introduction of chipping, demonstration on chipping and its applications.

Demonstration and function of chipping tools.

2.5 Description, demonstration and practice of simple operation of hack saw, straight and angular cutting.

2.6 Demonstrations, description and use of various types of blades - their uses and method of fitting the blade.

2.7 Introduction and use of measuring tools used in fitting shop like: Try square, Steel rule, Measuring Tape, Outside micrometer, Vernier Caliper and Vernier Height Gauge

2.8 Description, demonstration and practice of thread cutting using taps and dies

2.9 Plumbing: Descriptions and drawing of various plumbing shop tools, Safety precautions. Introduction and demonstration of pipe dies, Pipe holding devices, Demonstration and practice of Pipe Fittings such as Sockets, Elbow, Tee, Reducer, Nipple, Union coupling, plug, Bend, Float valves and Taps

Job: Cutting and filing practice on a square of 45 X 45 mm^2 from MS flat

Job: Angular cutting practice of 45^0 (on the above job)

Job: Preparation of stud (to cut external threads) with the help of dies (mm or BSW)

Job: Drilling, counter drilling and internal thread cutting with Taps

Job: H-Fitting in Mild steel (ms) square

Job: Pipe cutting practice and thread cutting on GI Pipe with pipe dies

3. Welding Shop

3.1 Introduction to welding, type of welding, common materials that can be welded, introduction to gas welding equipment, types of flame, adjustment of flame, applications of gas welding. Welding tools and safety precautions

3.2 Introduction to electric arc welding (AC and DC), practice in setting current and voltage for striking proper arc, precautions while using electric arc welding. Applications of arc welding. Introduction to polarity and their use

3.3 Introduction to brazing process, filler material and fluxes; applications of brazing. Use of solder. Introduction of soldering materials

3.4 Demonstrate and use of the different tools used in the welding shop with sketches. Hand shield, helmet, clipping hammer, gloves, welding lead, connectors, apron, goggles etc.

3.5 Demonstration of welding defects and Various types of joints and end preparation

Job: Preparation of cap joint by arc welding

Job: Preparation of Tee joint by arc welding

Job: Preparation of single V or double V butt joint by using Electric arc welding

Job: Brazing Practice. Use of Speltor (on MS sheet pieces) Job: Gas welding practice on worn-out and broken parts

4. Paint Shop

Introduction of painting shop and necessity. Different types of paints. Introduction of powder coating plant and their uses.

Job: Preparation of surface before painting such as cleaning, sanding, putty, procedure and application of primer coat, and painting steel item.

Job: Painting practice by brush on MS sheet

Job: Practice of dip painting

Job: Practice of lettering: Name plates / Sign board

Job: Polishing and painting on wooden and metallic surfaces

Job: Practical demonstration of powder coating

5. Forging and sheet metal shop

Introduction to forging, forging tools, tongs, blowers/pressure blowers, hammers, chisels, punch, anvil, swag-block etc. Forging operations.

5.1 Forge a L hook or Ring from MS rod 6 mm φ

5.2 Forge a chisel and give an idea of hardening and tempering

5.3 Lap joint with forge welding

5.4 High Strength Steel (HSS) tools – forging of Lathe shaper tools like side-tools and V-shape tools

5.5 Making sheet metal joints

5.6 Making sheet metal trey or a funnel or a computer chassis

5.7 Preparation of sheet metal jobs involving rolling, shearing, creasing, bending and cornering

5.8 Prepare a lap riveting joint of sheet metal pieces

6. Electric Shop

6.1 Demonstration of tools commonly used in Electric Shop

6.2 Safety precautions , electric shock treatment

6.3 Demonstration of Common Electric material like: wires, fuses, ceiling roses, battens, cleats and allied items

6.4 Demonstration of Voltmeter, Ammeter, Multimeter and Energy meter

Job: Wiring practice in batten wiring, plastic casing-capping and conduit

Job: Control of one lamp by one switch

Job: Control of one lamp by two switches Job: Control of one bell by one switch Job: Assemble a Tube light

Job: Dismantle, study, find out fault, repair the fault, assemble and test domestic appliances like electric iron, electric mixer, ceiling and table fan, tube-light, water heater (geyser) and desert cooler

Job: Laying out of complete wiring of a house (Single-phase and Three- phase)

7. Electronics Shop

7.1 Identification, familiarization, demonstration and use of the following electronic instruments:

a) Multi-meter digital

b) Single beam simple CRO , function of every knob on the front panel

c) Power supply , fixed voltage and variable voltage, single output as well as dual output.

7.2 Identification , familiarization and uses of commonly used tools; active and passive components; colour code and types of resistor and potentiometers

7.3 Cut, strip, join and insulate two lengths of wires/cables (repeat with different types of cables/ wires)

7.4 Demonstrate and practice the skill to remove components/wiresby unsoldering

7.5 Cut, bend, tin component, leads, inserts. Solder components e.g. resistor, capacitor, diodes, transistors on a PCB

7.6 Wiring of a small circuit on a PCB/tag strip involving laying, sleeving and

use of identifier tags

7.7 Demonstrate the joining (or connecting) methods/mounting and dismantling method, as well as uses of the items mentioned below:

a) Various types of plugs, sockets, connectors suitable for general- purpose audio video use. Some of such connectors e.g. 2 and 3 pin mains plug and sockets, Banana plugs, sockets and similar male and female connectors and terminal strips.

b) Various types of switches such as: normal/miniature toggle, slide, push button piano key, rotary, SPST, SPDT, DPST, DPDT, band selector, multi-way Master Mains Switch.

7.8 Exposure to modern soldering and de-soldering processes (Field visits)

7.9 De-solder pump, remove and clean all the components and wires from a given equipment, a PCB or a tag strip.