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**BACHELOR OF LIBRARY AND INFORMATION SCIENCE  
B.L.I.S.  
PAPER – III : KNOWLEDGE ORGANIZATION – I  
(CLASSIFICATION THEORY)**

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**BACHELOR OF LIBRARY AND INFORMATION SCIENCE (B.L.I.S)**

**PAPER – III : KNOWLEDGE ORGANIZATION – I**

**(CLASSIFICATION THEORY)**

**BLOCK INTRODUCTION**

- UNIT I CLASSIFICATION : DEFINITION, NEED, PURPOSE,  
BASIC CONCEPTS AND TERMINOLOGY,  
KNOWLEDGE CLASSIFICATION
- UNIT II UNIVERSE OF SUBJECTS  
FORMATION OF SUBJECTS  
DIFFERENT SCHEMES OF CLASSIFICATION
- UNIT III GENERAL THEORY OF CLASSIFICATION  
NORMATIVE PRINCIPLES  
THREE PLANES OF WORK  
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- UNIT IV NOTATION : DEFINITION, TYPES AND  
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- UNIT V ZONE ANALYSIS  
SYSTEMS AND SPECIALS  
PHASE ANALYSIS  
COMMON ISOLATES

**BACHELOR OF LIBRARY AND INFORMATION SCIENCE (B.L.I.S)**  
**PAPER – III : KNOWLEDGE ORGANIZATION – I**  
**(CLASSIFICATION THEORY)**

**Unit – I**

Classification concept : Definition – Need and purpose – Basic Concepts – Terminology – Document and Knowledge Classification.

**Unit - II**

Universe of Subjects : Knowledge structure and development – Formations of Subjects – Different Schemes of Classification – CC – DDC - UDC

**Unit III**

General Theory of Classification – Normative Principles – Three Planes of Work – Fundamental Categories – Facet Analysis – Postulates and Postulational Procedure

**Unit IV**

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**Unit V**

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## **BLOCK INTRODUCTION**

We are in the block of Course Three – Knowledge Organisation – I (Classification Theory). In this book we will discuss about the concept of classification, Universe of subject, different schemes of classification, Genere Theory of Classification, notation, zone analysis and common isolates.

The main aim of a library is to collect information in various forms of documents and store them in such a way that they are easily retrieved. In order to acquire basic knowledge of classification, definition, need and purpose of classification and functions have been discussed in the first unit.

The second unit of this block universe of subjects, modes of formation and different schemes of classification have been discussed.

In the third, you are going to explore to three planes of works namely the idea plane, verbal plane and notational plane. This makes possible to know the progress in the theory of classification.

In the fourth unit you will learn notation in terms of definition, types, qualities and functions to represent knowledge through the set of symbols.

In the fifth unit, you will discuss the concept of zone analysis, phase analysis and common isolates.

## UNIT - I

### 1.0 OBJECTIVES

After studying this lesson, the students should be able to

- i) Understand the concept of classification and its importance of modern libraries.
- ii) To identify the salient features of subject arrangement in modern libraries.
- iii) To describe need, purpose and function of library classification and also knowledge classification.

### LIBRARY CLASSIFICATION

#### 1.1 INTRODUCTION

The main aim of a library is to collect information in various forms of documents and store them in such a way that they are easily retrieved. Dr.S.R.Ranganathan has advocated the five laws of library science in order to maximize the use of documents in libraries. This can be achieved well by adopting various techniques such as classification, cataloguing, reference service etc. In order to provide the right document to the right user in right time, the documents in the library has to be arranged in proper order. Classification is one of the techniques used in libraries to arrange all documents in a helpful sequence to facilitate easy retrieval.

##### 1.1.1. Documents in Libraries

Libraries collect and store several types of documents like printed books, journals, pamphlets, reports, photocopies, films, music, maps, microfilms, microfiches, atlases, etc. A library need not have all the different types of documents. It depends on the environment of the particular library concerned. The main function of collecting, storing and retrieving documents has become more complex because of the following reasons:

- i. Number of documents produced in every field of knowledge is continuously increasing.
- ii. New documents are produced in various physical forms.
- iii. Documents are written in different languages.
- iv. Thought content of various documents are becoming more complex.  
And
- v. User needs are becoming more complex.

Nowadays Libraries are functioning as service institutions. The library must satisfy the information needs of the users who are the prime component of any library. The best way of meeting the user needs is having a helpful systematic arrangement of all documents. Such an arrangement should reflect the subject relationship of various documents. Instant location and retrieval of desired documents will be possible only with such a helpful arrangement.

### **1.1.2. Arrangement of documents in libraries**

A large variety of arrangements are possible. By arrangement, we mean the choice of a certain feature characteristic of each item (e.g.: Subject or Author) and placing the items in some sequence which systematically reflect the feature / characteristic. The possible arrangements are:

1. Size.
2. Colour
3. Age of reader Eg: Children's books etc.
4. Conditioned attached to use Eg: reference books, text books etc.
5. Language.
6. Value of printing.
7. Date of documents Eg: early printed books.
8. Year of publication
9. Publisher
10. Price
11. Author
12. Title
13. Subject

### **1.1.3. Final choice of the subject arrangement**

In academic and special libraries and to a large extent even in public libraries, the majority of readers approach specific documents, on the basis of their subjects. Due to the enormous output of documents, it is often difficult to recall specific title or author correctly except in the case of classification. Therefore, it was found that in well-organized libraries, documents are arranged on the basis of subject matter. This subject arrangement brings together books on the same subject and books on each related subjects.

Subject arrangement of documents enables to know:

- a) What documents the library has on a specific subject and
- b) What documents the library has on subjects related to the subject of enquiry

This kind of arrangement is known as filing sequence. In large and special libraries there are several section such as

- a) Text books
- b) Reference books
- c) Theses and dissertations
- d) Bound volumes of periodicals and
- e) Pamphlets.

We find that all these different collection are arranged by subject using a scheme of classification. It has been the opinion of the experts that arrangements of documents on a basis other than subject may not meet the requirements of the majority of readers in modern libraries. Subject arrangement, however, does not mean that there is no scope for author and title approaches. These approaches are taken through the author and title catalogues. Subject arrangement, then is paramount and the basis for it is the subject content of the document. Two kinds of arrangements are possible.

- 1) Alphabetical arrangement of subject (like Agriculture, Biology, Botany, Chemistry, etc) under which documents can be arranged alphabetically either by author or title.
- 2) The second kind of arrangement is a classified subject arrangement where documents are arranged according to a knowledge classification scheme such as colon classification.

#### **1.1.4. User Approaches of documents**

Arrangement of documents on the basis of a particular characteristic should satisfy maximum number of users. Normally users approaches for documents are of the following three categories

- i. By Author, called author approach
- ii. By title, called title approach
- iii. By subject, called subject approach

To meet the author or title approaches, the documents may be arranged by author or title. It is to be noted that documents could be arranged on the basis of only one feature at a time. Therefore, if we have title arrangement we can satisfy only the title approaches. If a user goes to the library with author name he/she cannot get the document.

#### **1.1.5. Classification and library classification**

In essence classification simply means the grouping together of like things according to some common quality or characteristic. This automatically implies the separation of the unlike. It is probably the simplest method of discovering order in the bewildering multiplicity of nature. It is a process of sorting of ideas or subjects. There are a number of activities where classification play its part. For eg: the arrangement of contents in a railway timetable, the display of goods in a grocery shop, the allocation of seats in a theatre, the usual separation of money into coins and notes, etc.

The word classification was derived from the Latin word 'classis' which means grouping. Classification is a mental process by which we group or separate things on the basis of common characteristics. For eg: items such as Buses, Radio, Taxis, Television, Trains, videos can be grouped into two, one group consisting Buses. Taxi and Train and the second group consisting Radio, Television and video. The first group has been arrived at with the help of a

common quality or characteristic “Forms of Transport” and the second group with a common characteristic “Items of electronic equipment”.

In making the above distinction and grouping the things as shown, a process of classification has been carried out. Here like things have been brought together and unlike separated. Since classification results in categories of things of concepts it is also known as categorization. Categorization is an aid to memory and reasoning.

#### **1.1.5.1 Library Classification**

A library or an information center, essentially builds a large collection of sources of information of which documents form the primary components. We need to have classification for organizing the collection. Thus the ‘classification of documents in a library or an information center’ is known as library classification. The most distinguishing feature of a document is its subject content and in majority of cases, the users approach of the documents is through subject content of the document. The library classification is designed with the ‘Subject of the document’ as the most preferred characteristic of the book. Therefore all the schemes of library classification, classify “Subjects of the document”.

#### **1.1.6. Definitions**

According to **Margaret Mann**, Classification “is the arranging of things according to likeness and unlikeness. It is the sorting and grouping of things, but, in addition, classification of books is knowledge classification with adjustments made necessary by the physical form of books”.

**Berwick Sayers** defines it as “the arrangements of books on shelves or description of them in the manner which is most helpful to those who read”.

**Arthur Maltby** revises Sayers definition as “the systematic arrangement of books and other materials on shelves or of catalogue and index entries in the manner which is most useful to those who read or who seek a definite piece of information”.

According to **Dr. S.R.Ranganathan** “it is the translation of the name of the subject of a book into preferred artificial language of ordinal numbers, and the individualization of several books dealing with the same specific subject by means of a further set of ordinal numbers which represent some features of the book other than their thought content”.

#### **Basic Concepts and Terminology of Library Classification:**

Before going to study the theory of library classification, it is essential to understand the basic concepts, that are indispensable to proceed further, and their terminology frequently used in this subject you are expected to learn them thoroughly so that the frequent occurrence of the terms in this subject won’t be a menace in understanding theoretical frame-work of library classification.

The concepts and terminology presented in this part have been adopted from Dr. S.R.Ranganathan's 'Prolegomena to Library Classification Ed. 3; Melvil Dewey's Decimal Classification Ed. 19, Encyclopedia of Librarianship by Landau: Librarian's Glossary: Reference book by L.M.Harrold etc.

- Entity : Any existent, conc. etc. or conceptual i.e. a thing or an Idea (Prolegomena Ed. 3. p. 53) e.g. : Boy, Book, Sweet, Chair, Happiness etc.
- Attribute : Any property or quality or quantitative measure of an Entity – Regarding Attributes of 'boy' are height, weight, Colour, mother tongue, character, nativity etc. (prolegomena, p. 53)
- Aggregate : A collection of entities without any special arrangement Among them (Prolegomena, p. 54)
- Universe : An aggregate under consideration in a given context (Prolegomena, p. 54).
- Finite : A universe with a fine number of entities (Prolegomena) Universe students in a class room, cities, home etc.
- Infinite : A universe with an infinite number of entities e.g. : Universe of population of past present and future, Universe of knowledge of past present and future. (Prolegomena, p.54)
- Growing : A Universe with new entities added to it or emerging in it Universe from time to time e.g. : Books in a library, subject of study Literature etc. bute. (Prolegomena, p.55).

#### **Unlike Entities :**

Entities not sharing a given attribute equally in measure, intensity, extent or on any other basis are unlike with reference to that attribute e.g. Two boys each five feet height, but born in 1929 and 1927 respectively, are LIKE with reference to their height but unlike with reference to their age. (Prolegomena, p.55).

#### **Self Assessment Questions I**

1. The word classification was derived from \_\_\_\_\_
2. List out the normal user approaches \_\_\_\_\_
3. Define library classification \_\_\_\_\_
4. Information explosion means \_\_\_\_\_

## **1.2. NEED AND PURPOSE OF LIBRARY CLASSIFICATION**

### **1.2.1. Need**

#### **i. Information explosion**

Due to “Information Explosion”, the amount of new documents is growing exponentially. The new documents are being published in variety of forms and variety of languages.

#### **ii. Continuous expansion of knowledge**

Libraries deal with the universe of knowledge that is all subjects. Librarians collect, store and disseminate information embodied in documents. If the number of subjects in the universe of knowledge is less and static, then there is no need for retrieval tools like classification. But on the other hand, the number of subject are continuously growing with more specialization. The new subjects are formed by different modes likes fission, fusion, distillation etc. For e.g. subjects like Computer Science, Genetic engineering etc. were not existing few years ago. Now they are well established subjects.

#### **iii. Complexity of documents**

New documents being published are not only in simple subjects, but also on compound and complex subjects. Complex documents deal with more than one subject. Classification schemes to deal with such complex subjects are necessary.

#### **iv. To meet the fourth law**

The essence of library service is to serve the users with reliable and timely information, satisfying the fourth law “Save the time of the reader” and there by the time of the staff. This will be possible only with a good classification.

#### **v. To maximize the use of documents**

The main function of a library is to maximize the use of the collection by making available each and every document to the user without delay. To perform this it is necessary to replace all document retrieved from the shelves after their use. For proper retrieval and replacement, classification is necessary.

#### **vi. To fix a helpful place for newly added documents**

As new documents are coming to the library not only on the existing subjects but also on new subjects which the library did not have earlier, Such new documents on new subjects cannot be placed randomly at any place. These new documents should be placed with related subjects. Classification helps to place such new documents in their correct places.

#### **vii. To make quantitative study**

To maximize the use of documents in each subject the librarian must know the strength and weaknesses of his/her collection. This can be

achieved only if the books are classified and arranged in proper order according to subject.

**viii. To weed – out documents**

Classification helps to withdraw unused documents from the collection so that the remaining collection becomes lively.

**1.2.2. Purpose**

In essence, the purpose of library classification is to arrange document in a helpful sequence, or rather, to mechanise the arrangement of documents in a helpful sequence. It is also to help mechanise the correct replacing of books returned after use. Again it is a help to fix the most helpful place for a newly added document among those that are already in a library.

**1.3. Functions of library classification**

The functions of library classification can be summarized as follows:

- i) Library classification helps to arrange documents in a systematic order which is most convenient to the reader and the library staff. According to Henry Bliss classification brings related subjects in close proximity.
- ii) It helps the identification and location of a document on a given subject required by a reader whatever, may be the size of the library collection. Documents can be quickly retrieved from and replaced to their original positions.
- iii) It helps to arrange documents into organized groups like pigeon holes and when a new document is added to the collection classification finds an appropriate place for the newly added document among the other documents on the same subject.
- iv) The universe of knowledge is dynamic, continuous, infinite and ever-growing. New areas or subjects are being continuously added to the sum total of human knowledge. When the first document on a new subject is added to the library collection, it finds itself an appropriate place among the already existing related subjects and according to the level of its relationship to them.
- v) It helps to organize book displays and exhibitions. It facilitates withdrawal of certain documents from the main collection of special purposes and occasions such as books talks, seminars, symposia, conference and special exhibitions, on a given topic.
- vi) It helps in recording daily issues of documents on various subjects at the circulation counter of a library. It facilitates compilation of statistics on issues which reflect the pattern of use and demand of documents on different subjects. The feed back helps in the allocation of funds to various subjects and guides the book selection policy of the library. The statistics so collected can be included in the annual report of the library.



- vii) Stock verification is a very important aspect of library administration. Library classification, through the medium of shelf-list, facilitates efficient and thorough stock verification of the library holdings.
- viii) It helps in the compilation of subject union catalogues and bibliographies of books and other reading materials. The union catalogues are very important tools for resource sharing and cooperation among libraries.
- ix) It assists in the classification of bits and pieces of information and suggestions, received from the readers and the reference queries attended to in the reference department. This facilitates proper analysis of the reference queries in various aspects and indirectly helps in efficient reference service.
- x) It assists in systematically deriving subject entries and also aids the cataloguer to use alphabetical list of subject headings for deriving specific subject headings through class numbers.
- xi) Non-book material such as films, slides, maps, microforms, photographs and correspondence can be classified and filed systematically.
- xii) It helps the library staff, especially the classifier, to be aware of and comprehend the complexities in the development of the universe of the knowledge which is the basis for the systematic arrangements of documents in libraries.
- xiii) It is the basis for organization of knowledge embodied in documents for maximum use. It is the basis for efficient bibliographic control and retrieval of documents. It is a great time saving device for the reader and the library staff. As Hume puts it, "it is a mechanical time saving device for the discovery of knowledge in books".

The books and other reading materials in a library are varied and complex in their nature and hence it is essential that these materials must be classified and arranged in proper order.

### **Self Assessment Questions II**

1. Micro document is \_\_\_\_\_
2. What is depth classification ?
3. Entity means \_\_\_\_\_
4. List of leading classification schemes\_\_\_\_\_

## **1.4. Knowledge Classification**

Knowledge as we know today is a product of the general development of human civilization. Dr.S.R.R. defines knowledge as the totality of ideas, conserved through human civilization. Generally the term knowledge refers to the Universe of ideas. The term 'Knowledge' and 'information' are often used as synonyms of the term 'ideas' are communicated by others or obtained by personal study and investigation. Ideas are transmitted into knowledge when they are preserved in graphic and other materials. In this sense, knowledge is nothing but thought content of the document.

### **1.4.1. Land marks in knowledge Classification**

As pointed earlier, the philosophers were greatly interested in studying the mutual relations between ideas and also the sequence of ideas. This led to large number of schemes of classification. These were mainly prepared for their mental satisfaction without keeping in view their application on for the arrangement of ideas. A number of schemes of knowledge classification were produced. Such schemes appeared mostly before the nineteenth century.

Some of these leading schemes were :

Vedic Classification (Vedic Period) (Socio Centered)

Greek Classification (Utility Centered)

Baconion Classification (1605) (Psychology Centered)

Kan't Classification (1781) (Based on primitive human instinct)

Hegal's Classification (1812)

A number of schemes of classification which made an attempt to provide place for application of each discipline after the discipline which forms its basis or foundation. Thus a pure discipline was put before its application.

### **1.4.2. Classification of knowledge for documents**

The word knowledge means an assured belief or that which it known. Classification is the result of the arrangement of various classes. It means putting similar entities together and separating unlike entities. Documents are records of work on paper or on other materials. Classification of knowledge in documents is a process of grouping documents containing like divisions of knowledge and separating documents dealing with unlike divisions of knowledge.

## **1.5. Summary**

The books and other reading materials in a library are varied and complex in their nature and hence it is essential that these materials must be classified and arranged in proper order.

### **Unit Questions**

1. Define Library Classification. Discuss the importance of classification in modern libraries.
2. Bring out the salient features of subject arrangements with examples.
3. Describe the need, purpose and functions of library classification.
4. Write a note on knowledge classification.

### **Further Reading**

1. Ranganathan (S.R.) Prolegomena to Library Classification Ed. 3, 1967.
2. Ranganathan (S.R.) Elements of Library Classification, 1962.
3. Palmer (S.I.) and Wells (A.J.) Fundamentals of Library Classification.
4. Malby (A) Ed. Sayer's – Manual of Library Classification.
5. Krishankumar Theory of Library Classification, Ed.2, 1981.
6. Needham (C.D.) Organising Knowledge in Libraries, 1971.

### **Answers to Self Assessment Questions**

#### **I.**

1. Classis
2. Author, Title and Subject
3. Classification is a mental process by which we group or separate things on the basis of the common characteristics.
4. Information Explosion means multi-dimensional growth of documents.

#### **II.**

1. Micro document is a document with depth ideas.
2. A scheme of classification on micro subjects
3. Entity means any existent, conc. etc. or conceptual i.e. a thing or an Idea
4. CC, DDC and UDC

## UNIT - II

### 2.0 OBJECTIVES

After studying this lesson, the students should be able to

- i) Understand the growth and development of subjects
- ii) To identify the different modes of formation of subjects
- iii) To describe the structure of CC, DDC and UDC.

### 2.3. UNIVERSE OF KNOWLEDGE

The existing universe of knowledge is a turbulent ever growing dynamic continuum. The study of the characteristics of knowledge enables us to understand the growth of knowledge and its influence on the designing of the scheme for library classification.

#### **Infinite Universe**

Knowledge has an endless growth. It is growing consistently. Hence, the universe of knowledge. Can be taken into include all knowledge – past, present and future i.e. known well as unknown knowledge can be illustrated below:

#### **“Biology”**

General Biology

Cellular Biology

Cancerology

Microbiology

#### **Dynamic Universe**

In the past, when population pressure and social pressure were low, there was no incentive for organized development of universe of knowledge. But at present time rigorous research works have to be undertaken to meet the challenge of the time. The incentives given by the government to accelerate research. The launching of research in series have speed up the growth of knowledge is dynamic and is ever growing.

#### **Dynamic Continuum**

Knowledge is dynamic and so it is continuum organized research in series is producing a continuous cascade of new micro thoughts, each stimulating another in every region of knowledge. This cascade makes the universe of knowledge of dynamic continuum.

#### **Turbulent Universe**

Dr.S.R.Ranganathan indicates the dynamic nature of universe of subjects by measuring the rate of discoveries in a particular period and also the growth of research expenditure on a given period. The universe of knowledge is in the state of turbulence and it is being violently disturbed and confused old theories, tenets and principles etc. are vigorously examined in the light of

experimentation and experience and if they do not contradict even in the present time, no change in the universe of knowledge takes place. These disturb the linear growth of universe of knowledge.

### **Multidimensional**

Knowledge does not grow only in one direction. Dimension is an undesirable term to respect of the universe of knowledge. “Dimension is a degree of manifoldness of a system fixed by the number of parameters, necessary and sufficient to distinguish any one of its entities or parts from all others.”

### **Multidirectional**

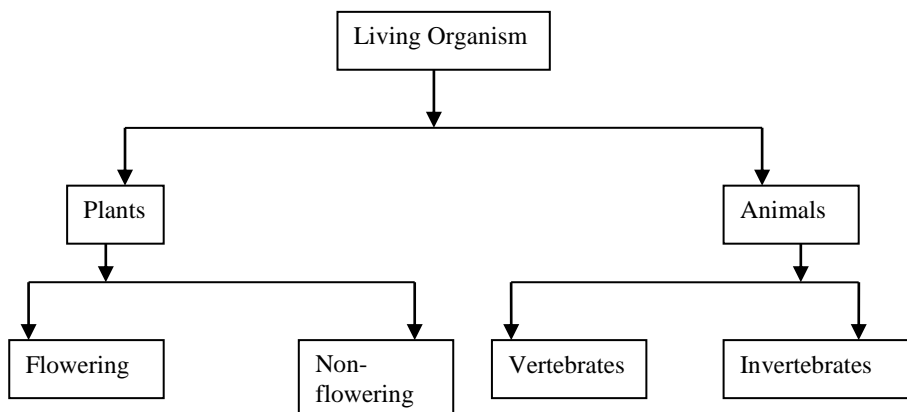
The growth of knowledge occurs in many directions. A subject may have intersection with many other subjects. For example the intersection of the subject biology with other subjects resulted in new subjects like Micro-biology, psychobiology etc.

### **Structure and Development of Subjects**

The various kinds of structure of subjects can be studied in terms of principles of division as illustrated below:

#### **Dichotomy**

It means divisions into two. In the first stage two divisions take place. In the second stage, two subdivisions of each division are obtained. In this manner, the process of division may be continued.



#### **Decachotomy**

Decachotomy refers to a division into ten. Melvil Dewey divided the field of knowledge into nine main classes, and the tenth class formed for general documents, not belonging to any of the main classes. This process of division into ten at each stage is continued till as many subdivisions as required have been obtained. But it is realistic to bind the university subjects to a decachotomy, because it grows in different directions and at different stages.

### **Polichotomy**

Polichotomy refers to a division into many. In 1893 C.A.Cutter, in expansive classification introduced polichotomy in a limited way by stipulating the number of divisions to be 24 at each stage of division. But Universe of subjects is a turbulent, ever growing dynamic continuum. Therefore it is not possible to predict the maximum number of division is a particular stage of division. Therefore colon classification (6<sup>th</sup> Edition) has provided more than a thousand divisions at any stage. This provision has been increased further in CC7.

### **Proliferation**

We have seen that the universe of subjects grows continuously pouring forth new subjects. Such combinations of micro and macro ideas will identify the proliferation of ideal subjects. During the last few decades research has been planned and conducted more consciously and thoroughly.

The need for classification is important from the theoretical as well as practical point of view because the general systems of classification of knowledge depends on theories of knowledge. The study of literature indicates that there has not been a sufficient exchange of ideas between philosophers and specialists in Library Classification.

## **2.2. MODES OF FORMATION OF SUBJECTS**

When ideas get organized or systematized in the form of a body of ideas, a subject is formed. H.E.Bliss studied the universe of and found out that the consensus of a particular period decide the formation of subjects. However, it is Ranganathan who studied the universe of subjects systematically and explained the different modes of formation of subjects. In order to design and develop the schemes of classification along proper lines, it is essential to make a systematic study of attributes regarding the formation structure and development of the universe of the subjects. The study of modes of formation and the structure of subjects in the universe of subjects as well as of the isolate ideas in the universe of isolate ideas will serve as preliminary to the theory of freely faceted classification.

Dr. S.R. Ranganathan has identified seven modes of formation of subjects. They are:

1. Fission
2. Fusion
3. Lamination
4. Loose assemblage
5. Agglomeration
6. Clustering
7. Distillation

**(1) Fission:-**

Fission means division of the whole into multiple parts. It is kind of fragmentation. In library classification the terms refers to the process of dividing a universe in to sub-universe by applying certain characteristics.

**i) Dissection:-**

It is the simplest method of forming subjects. It is cutting of a universe of entities in to parts of co-ordinate status. When the parts are ranked, they form an array of classes on the basis of a single train of characteristics and there by creating an array of new subjects or isolates. The subdivisions that we get by dissection are mutually exclusive.

Example:-

- a) The primary basic subjects “philosophy” may be fissioned in to the following secondary basic subjects. Viz logic, epistemology, metaphysics, ethics and aesthetics.
- b) Fission of the isolate idea “Asia” gives us array divisions such as China, Japan, India, Pakistan and so on.

**ii) Denudation:-**

It is the process of progressive diminution or Lessening of the extension and the increase of the intention of a division of knowledge. This mode is used then when a succession of sub-division each subordinate to the earlier one are required. When the sub-divisions are arranged they form a chain of classes.

Example:-

Asia, India, South India, Tamilnadu, Madras.

Fission results in the formation of traditional basic subjects as well as systems and special basic subjects. Classification schemes begin with fission.

**(2) Fusion:-**

The process of fusing two or more basic subject and forming a new basic subject is known as fussion. In this process the fused subjects loses its individuality.

Example:-

- I. Bio Chemistry (It is a primary basic subject achieved by the fusion of “Biology” and “Chemistry”)
- II. Astrophysics (It is a primary basic subject achieved by the fusion of “Astronomy” and “Physics”)

**(3) Lamination:-**

According to S.R.Renganathan the process of construction of over laying facets on facets, ever as make sandwich by overlaying vegetable

layer on the layer of bread. When the basic layer is the basic subject and other layers are isolate, compounded subjects is formed.

#### **Lamination Kind-I**

In this form of mode “one or more isolate (I) facets are combined with a basic subjects (BS)”. This modes five rise to a compound subjects.

#### **Examples:-**

- i. Sociology (BS) city (I) poverty (I)
- ii. History (BS) India (I) constitution (I)

Note: (BS) is a basic subject. (I) is an isolate.

#### **Lamination Kind-I**

In this form of mode, either “1. Two or more species of basic subjects going with the same primary basic subjects are compounded over one another, giving rise to compound basic subjects” or “2. Two or more isolates from the same schedule of isolates are compounded, giving rise to the compound isolates”.

#### **Examples:-**

- I. Study of radiation according to wave mechanics (Here, the subject is a compound basic subjects got by the combination of the basic subject “radiation physics” with the basic subject “Wave mechanics”.
- II. Magnetism is quantum physics (similar to example (I))

#### **(4) Loose Assemblage:-**

Assembling together of two or more subjects or isolate ideas with relationship among each other results in complex subject, complex isolated idea. Each component in the assemblage is known as Phase, Phase care General, Bias, Comparison, difference, Influential.

#### **Loose Assemblage Kind-1**

In this mode, two or more subjects simple or compound are studied in their mutual relation. The relation may be any one of the five types identified above. This is called Inter-subject Phase relation. It gives to complex subjects.

#### **Example:-**

- I. Political science and Economics
- II. Difference between political science and economics.

#### **Loose Assemblage Kind-2**

In this mode, two or more isolates from one and the same schedule was brought in to mutual relation. The relation may be general, bias, comparison etc. This is called Intra-facet Phase relation. It gives rice to complex isolates.



**Example:-**

- I. Influence of infectious disease on metabolism.
- II. Difference between cataloguing and services.

**Loose Assemblage Kind-3**

In this mode of formation “Two or more isolates taken from one and same array of order higher than in one and the same schedule are brought in to mutual relation” such a relation is called “Intra-array Phase relation”, and the give rise to a complex subjects.

**Example:-**

- I. The relation between UDC and DDC
- II. Difference between CC and DDC

**(5) Agglomeration:-**

“Agglomeration is the process of the collecting together of entities into large masses without cohesion among the components”. Earlier this was referred to as partial comprehension. An agglomerate can be basic subject, or it can also be an isolate idea. Agglomeration may be made up of consecutive constituents or even non-consecutive constituents.

**Agglomeration Kind-1 (Agglomeration of consecuted Basic subjects)**

This type covers subjects going with consecutive main subject enumerated in the schedules of a scheme of classification. The range of subject field covered by different agglomerated subjects varies.

**Example:-**

Political Sciences  
Biological Sciences

**Agglomeration Kind-2 (Agglomeration of Non-consecutive Basic subjects)**

It comprehends subjects going with non-consecutive main subjects with respect to the schedules of a particular scheme for classification.

**Example:-**

- i. History and Economics
- ii. Agriculture and Engineering etc.

**(6) Clustering:-**

Sometimes to gather all possible information about a ‘phenomenon’ or ‘entity’, may require the attention of several specialists from different disciplines. This kind of research may involve interdisciplinary or multidisciplinary research. For the sake of convenience, “the preliminary results and data obtained the work failing in different subject fields involved in the study of a phenomenon or an entity are

brought together in an document and treated disjunctively..... that is, without any substantial integral treatment..... The document in which the preliminary results are brought to gather just as collection, taken as a whole, presents a subject-field in which there is core entity of study with inputs or view points or work it coming from specialists in subjects going with diverse basic subjects. This is explained as clustering around a nodal idea. Thus, in cluster form of mode, “several specialized studies on a particular phenomenon or an entity are gathered together into a field of study”.

**Example:-**

- a) Area study (geographical area forms the focus of cluster)
- i) Indology (Indian studies)
- ii) Nipponology (Indian studies)
- iii) Orientalia (Asian studies)
- iv) Occidentalia (European studies)

**(7) Distillation:-**

In this form of mode, ”a pure discipline is evolved as a primary basic subject from its appearance-in-action in diverse compound subjects going with either different basic subject or one and the same basic subject”.

Distillation gives rise to primary basic subjects.

**Example:-**

Management Science

Research Methodology.

A variety of relations are possible between any two components of a subject. These relations can be formalized into a set of relations leading to a typology of relations. This typology of relations postulated by Ranganathan is helpful in determining the stage of development of a subject. The mode of formation of a subject affects its structure. The modes represent various kinds of relations which lead to the formation of subject in the universe of knowledge. We can also have all possible combinations of these modes.

**Self Assessment Questions I**

1. List out any four modes of formation of subjects.
2. Asia, India, South India, Tamilnadu is example of \_\_\_\_
3. What do you mean by clustering?

## **2.3. DIFFERENT SCHEMES OF CLASSIFICATION**

### **2.3.1. COLON CLASSIFICATION**

Colon classification (CC) is a general classification scheme designed by Dr. S.R. Ranganathan. He applied the scheme to classify documents during 1924 to 1932 and the first edition was published in 1933. Other editions and their year of publication are given below:

Ed 2	- 1939
Ed 3	- 1960
Ed 4	- 1962
Ed 5	- 1957
Ed 6	- 1960

Reprinted in 1963, 1964, 1967, 1978 and 1989.

#### **2.3.11 Analytico Synthetic Feature**

CC is an analytico synthetic scheme. It does not give ready made class numbers. The analytico synthetic feature means that the classifier should analyse the subject of each document into different facets. Pick up numbers for each analyse facet from several parts of the schedule and synthesis the final number.

#### **2.3.12 Parts of colon classification**

The 6<sup>th</sup> edition of CC is in three parts namely.

Part1 : rules (Pages 1.1 to 1.24 )

(Pages 2.1 to 2.172)

Part 2: Schedules of classification

Part 3: schedule of classics and sacred books with special names ( page 3.1 to 3.128)

It may be noted here that all these parts follow separate sequence in the matter of pagination.

In addition to the above three parts the list 28 pages provide information on the following:

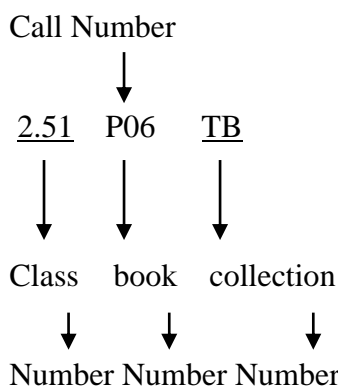
1. Preference to the 6<sup>th</sup> edition
2. Introduction; and
3. Annexure which contains correction of misprints and a few minor change.

#### **2.3.13 Call number**

The call number may be used by the readers in calling for a book.

A call number according to CC is made up of the class numbers. Book number and collection number The three numbers complained together from all

number. The three elements stand distinct with the gap of two spaces. The class number specifies the subject of the book. The collection number is used to individualize each book. The collection number of a book denotes the collection to which belongs. For eg: a book “an introduction to classification” gets the following number:



In the example 2.51 indicates the subject of the book; P06 represents the year of publication, and TB stands for text book collection.

### 2.3.14. Main Classes and Class Number

The class number of a document represents the subject contents embodied in the document in classificatory language Ranganthan defines class number as "translation of the name of the specific subjects of a book into the artificial language of original numbers".

CC has organized the whole universe of knowledge of three traditional divisions namely

1. Natural sciences
2. Humanities and
3. Social sciences

These three divisions are further divided into several main classes. And each main class is again divided into isolate ideas of the basis of one or more characteristics. The following table the main class and the representative main class numbers.

#### Main Classes

Z	Generalia	M	Useful arts
1	Universe of knowledge		
2	Library Science	Δ	Spiritual Experience and Mysticism
3	Book science	MZ	Humanities and social Science
4	Journalism	MZA	Humanities
A	Natural sciences	N	fine arts

AZ	Mathematics sciences	NZ	Literature and Language
B	Mathematics	O	Literature
BZ	Physical sciences	P	Linguistics
C	Physics	Q	Religion
D	Engineering	R	Philosophy
E	Chemistry	S	Psychology
F	Technology		Social Sciences
G	Biology	T	Education
H	Geology	U	Geography
HZ	mining	V	History
I	Botany	W	Political Science
J	agriculture	X	Economics
K	Zoology	Y	Sociology
KZ	Animal husbandary	YX	social work
L	Medicine	Z	Law
LZ	Pharmacology		

The been categorized as rounds and levels. For eg the subject “Treatment of cancer” has two isolates of energy category ‘ Treatment’ and ‘cancer’. The sequence will cancer: treatment. The isolate ‘cancer’ is the First problem and therefore it is ' First Round energy’ and Treatment is the second problem and hence it is second round energy.

### **Systems and Specials**

Some subjects are expounded according to some special school of thought. For eg., there are many schools of thought in medicine like. Connætingsm|l

LB Ayurveda

LC Siddha

LD Unani

LL Homeopathy

LM Naturopathy

It is to be noted that systems are not confined to main classes only. In Mathematics the canonical class 'Geometry' has systems such as

B6M Non-Eucildean

B6M3 Elliptic

B6M5 Hyperbolic

B6 N Line – complex

Systems facets have been enumerated in CC at the end of the following main classes:

Physics, Agriculture, Medicine, Psychology, Education, History and Economics.

Specials refer to the specialization in a specific subject area of a subject form a particular point of view. For eg., medicine is specialized to a limited range like.

LBC child medicine

LBF female medicine

LBX Industrial medicine

Colon classification designed by Dr. S. R. Ranganathan is a faceted classification scheme exhibiting analytic – synthetic feature. Arrangement of documents based on such scheme would facilitate the location and retrieval of documents by the users of a library. CC has a sound the oriental base with a set of canons postulates and principles. The scheme is continuously augmented by new developments from time to time.

### **2.3.2 DEWEY DECIMAL CLASSIFICATION: AN OVERVIEW**

Decimal classification of Melvil Dewey is an almost – enumerative classification scheme. According to S. R. Ranganathan an almost enumerative classification is a scheme “Consisting of a large schedule enumerating most of the past, the present and anticipatable future and in addition a few schedules of common isolates”.

DDC is the oldest and most widely used system. The system has spread to more than 130 countries a throughout the world. It has been translated into scores of languages form Spanish Norwegiam, Turkish, and French to Japanese, Sinhalese, and the DDC forms the basis of Universal decimal Classification (UDC) another international system.

#### **2.3.21. Development of DDC**

DDC has grown from an anonymous 44 page phampet entitles “A classification and subject index for cataloguing and arranging the books and phamplets of a library” published in 1876 to a three volume work of some 3,000 pages. A recent survey shows that over 85 percent of libraries in U.S.A and Canada use DDC the second edition was published in 1888 with many improvements upto 13<sup>th</sup> edition thee policy of integrity of numbers (i.e., the numbers and their meanings were linked for ever and that there would be no changes in the existing number). From 14<sup>th</sup> edition this policy was changed and more features were introduced which gave greater flexibility. In 16<sup>th</sup> edition theconcept of phoenix schedule (i.e., completely new development of the schedule) was introduced. The 17<sup>th</sup> edition of DDC was published in 1965 with phoenix schedule for psuchology. The 18<sup>th</sup> edition was published in 1971 with 3 volumes. The “divide like” note followed so far was replaced by “Add to”

instruction. The number of auxiliary tables was increased from two to seven. The helped in increasing its is faceted concept and provided greater hospitability and flexibility in number building.

### **2.3.22 DDC 19th EDITION**

The 19<sup>th</sup> edition was published in 1970. This edition has phoenix schedules for sociology the political process, and British local administration units. The edition was produced by computerized photocomposition.

#### **Structure**

The 19<sup>th</sup> edition appears in three volumes

Vol 1: Introduction tables

Vol 2: Schedules

Vol 3: Relative index

Volume 2 forms the core of the system and thee other two volumes act as important auxiliaries.

#### **Vol 1: Introducing Tables**

This first volume include the following these important items

- i) Introduction
- ii) Tables
- iii) Summaries

This introduction part explains the characteristics of 19<sup>th</sup> editin, the basic plan which includes the structure of the scheme etc., a practical guide to the use of the scheme, aglossary and an index

In the tables part the seven tables are provided. These tables greatly enhanced the potential of DDC. The seven tables are:

Table 1 : Standard Subdivision

Table 2: Areas

Table 3: Subdivisions of individual literatures

Table 3: Subdivisions of individual languages

Table 5: Racial, Ethnic, National groups

Table 6: Languages

Table 7: Persons

Among these the area table occupies maximum pages of volume one. The notation listed in all these seven tables never be used alone. They are always be used with the core numbers from the schedule.

The last part of volume 1 contains three main summaries. The first summary gives the list of ten main classes. They are:

- 000 Generalities
- 100 Philosophy & related discipline
- 200 Religion
- 300 Social science
- 400 languages
- 500 Pure Sciences
- 600 technology ( Applied Sciences)
- 700 The arts
- 800 Literature
- 900 General Geography and History

Each main class listed above is divided into ten divisions. All the 100 divisions of all main classes are listed in the second summary. Each division of the second summary is further divided into ten sections and all 1000 sections thus arrived are listed in the third summary. All three summary act as a guide to understand the specific divisions in Volume 2 (Schedules). Before the classifier tries to use DDC, he/ she should study these three main summaries.

### **Vol 2 : Schedules**

This Volume is the core of the system consists of entries covering the whole universe of knowledge. DDC is a hierarchical system using the decimal principle for the subdivision of knowledge. That if each group is divided from the broadest to the most minute on a base of ten. The first division of knowledge gives ten main classes numbered 0 to 9 Main class 0 is used for general works.

Main classes 1 to 9 consists each of a major discipline or group of discipline. In 2nd edition of DDC the three digit minimum of principle was introduced. Accordingly the notation used to designate each class consists of minimum three digits. Therefore the main class members consists of three digits as follows:

- 000 generalities
- 100 Philosophy and related discipline
- 200 Religion
- 900 General geography and History

In those three digit notation the first digit is the main clear number and the remaining two zeros are filters. Each one of the above main class is divided into ten divisions. The division number is denoted by the second digit. For example



600 Technology ( Applied Sciences)

610 Medical Sciences



6 - Main.class number

1 - Division number

0 - Filler

Each one of the divisions is divided into ten sections and the section number is denoted by the digit of to class slumber.

Thus. in 610 Medical sciences

616 diseases



6 Main class number

1 Division number

6 Section number

In the same manner further divisions are carried out to the desired extent. After the third digit a decimal point is placed. In other words the progressive steps are indicated by the addition of one new digit at each level of division. The following hierarchical chain explains this fact:

600 Technology (Applied Sciences)

630 Agriculture and related technologies

636 Animal husbandry

636 12 Race horses

### **Vol 3 : Relative Index**

The relative Index is an important part of DDC. The importance of the index has been pointed out by Caster:

" Since the basic arrangement of the DDC --- is by discipline on field of study, any given subject (thing or concept) may be classified in many or all of the disciplines - it is the purposes of the relative index to bring together the various aspects of as subject to show their dispersion throughout the classification"

The relative index does include the specific terms listed in the schedule and also some subjects whose numbers are obtained through number building. In other words DDC subjects by discipline in volume 2 and in the relative index all the scattered subjects are grouped together. Following is the modified example of relative index.

Copper arts	739 511
Chemistry inorganic	546.662
Organic	547.05662
Technology	661.065
Construction architecture	721. 044. 73
building	683 .73

### **2.3.23 Number Building / Synthesis of Class Numbers**

Eventhough the DDC was basically an enumerative scheme. It started adopting the fact structure to some extents beginning with three 17th edition. This clear from the provision of seven tables and many slumber building devices.

DDC is one of the most interesting development in the history of librarianship. It was the first scheme meant for all kinds of libraries. It was the first scheme to propose the concept of relative location in place of 'fixed location' of documents. The growing number of libraries throughout the world adopting this scheme demonstrates its qualities.

### **2.3.3 Universal Decimal Classification (U.D.C.) :**

#### **History :**

The Universal Decimal Classification is the outcome of the international expansion and adaptation of the Decimal Classification for classifying micro documents. Its inception was caused by the first international Conference led to the formation of Institute of International de Bibliographic (IIB) due to the effort of Henry La Fontain and Paul Otlet. They wanted to compile a universal Bibliography and for that they took the DDC base to develop UDC for close classification.

In 1905 a new scheme entitled Manuel de Repertoire Bibliographique Universal was published. Since 1905 several versions of the UDC have appeared – UDC 2<sup>nd</sup> Edition (French) in 1927-33; UDC 3<sup>rd</sup> Edition (German) during 1933-52; UDC 4<sup>th</sup> edition (English) incomplete). An abridged English version was issued in 1948 which went in 1931 into Institute international de Documentation national bodies. Now it exists in its present name International Federation for Documentation (IFD).

#### **Principle :**

The principle underlying the UDC are (a) to follow the general pattern of the UDC schedules, i.e., the division of the whole human knowledge into ten main classes each further sub-divided decimally to the required degree, (b) to retain the use of the decimally conceived numerals and (c) to introduce numerous synthetic devices an auxiliary apparatus of connective and relation signs lacking in the DC.

In the introduction of the abridged edition, it is stated “it is a universal classification, in that any attempt is made to include in it every field of knowledge, not as a patch word of isolated, self sufficient specialists groupings but as an integral pattern of correlated subject”.

The hospitality or flexibility of notation is achieved through the auxiliaries denoting time, place and similar commonly recurring denoting time. Place and similar commonly recurring categories in each case forming continued or compound numbers.

It further states, “Essentially, the UDC is a practical system for numerically coding information, so designed that any item”. Once code and filed correctly can be readily found from whatever angle it is sought.

Since UDC has adopted the basic outline of DDC the structure in the allocation of subjects is similar to DDC with some modification in notation. The tables in which are set out the Main classes 1 to 9 and various services of special auxiliaries and (2) common auxiliaries and connecting symbols. There is an index, as per the their abridged English edition of UDC (BSI CCCA; 1961) in the Main table the layout of the Main Classes is given below:

**O. Generalities :**

1. Philosophy Metaphysics, Psychology, Logic, Ethics and Morals.
2. Religion, Theology,
3. Social Science, Economics, Law, Government Education.
4. Philosophy, Languages.
5. Pure Science, Mathematical and Natural
6. Applied Science, Medicine and Technology.
7. The Arts including Architecture, photography Entertainment and Sport.
8. Literature.
9. Geography, Biography, History.

In the above outline 4 standing for philosophy, Language has been shifted and placed under 8 literature in the late works. Each Main class is subdivided by means of continuous extension of the decimal fractions adopting the principles from general to particular. If the number of divisions is less than ten, then decimal principle is adopted and if the divisions are more than ten, centenal divisions are used. Gaps in notation have been provided to accommodate new classes in future.

**Special Auxiliaries :**

Special auxiliaries are represented by – (Hyphen), 0 (point zero), (apostrophe). These auxiliaries serve to signify analytical sub-divisions of some special classes, particularly in the field of science and technology. Of these, the auxiliaries with hyphen as the symbol or facet indicator are the most widely applicable. Especially under 621-1/9. In the fields of Arts and

Humanities degree. In 8 literature, 07 is used to bring literature and language together. So 8-07 stands for linguistics. The 'apostrophe' is however, not analytical but synthetic in function. In 546 inorganic Chemistry its use can be observed.

### **Common Auxiliaries :**

The following are the categories of Common auxiliaries. Each category has its distinctive notation (1) Co-ordination and consecutive extension. Coordination and extension are represented by the symbols and / (stroke) respectively. The + sign is used, when a work joins subject matter of about equal interest from two classes, e.g. 622 + 669 stands for Mining and Metallurgy.

The stroke (/) sign is when some consecutive UDC numbers imply broad or an aggregate of subjects, e.g. 2/599 (i.e. from 592 to 599) systematic Zoology; 22/28 Christian religion.

The + and /are used when UDC does not provide a single comprehensive number.

1. Relation represented by : (colon) or by [ ] (square brackets). As two or more concepts may come together into some relationship other than more coordination. In that case : (colon) is the device to link such concepts,  
e.g. 63 : 31 Agricultural Statistics.  
Colon may be replaced by [ ] square brackets, when the second class number signifies a subordinate concept,  
e.g. Office organization in Banks 651 [332.1].
2. Language, represented by = (equal) : This category of auxiliary is used to specify the language in which the book is written, e.g. Library Classification written in German 0.25.4 (021)
3. Multilingual is represented by = 00. For example, Polyglot Bible 2=00. The original language and the language of translation are also specified first by original language and next by language of translation. I.e. Aristotle's 'Politics' written in Greek is translated in German 321-1 = 30.
4. Place, represented by (0) bracket zero : The form auxiliaries correspond to the Standard Sub-division of DDC e.g. Dictionary of physics 53 (03); History of physics 53 (09) etc.
5. Place, represented by (1/9) areas number in circular brackets. From this table of place, we get the appropriate number of places and enclosed in circular brackets, for Example, 385 is Railways. In space table 54 stands for India. So. Indian railways, gets class number 384 (54)

6. Race and Nationality, represented by ( = ) equal circular bracket : This table serves to signify ethnological relationship or racial aspects. These are based on the common auxiliaries of language. e.g. (1) Folk Songs of French people is represented by the class number 784.4 ( = 4) (2) Folk songs of French Canada. 78.4 (71 = 4).
7. Time, represented by “(inverted commas)” – By this category of auxiliaries, the UDC seeks to specify all facets of time, i.e., year, months, days etc. by simple numerical statement, e.g. “1986.0815” Stands for 15<sup>th</sup> August, 1986.
8. Alphabetical and (non-decimal) numerical subdivisions: This division simply indicates the use of a letter in the notation to allow an alphabetic arrangement of subjects already specifically classed, e. g. 92 (Gandhi) stand for Biography for Gandhi. This may also be written as 92 (Gandhi).
9. Point of view, represented by .00 (point zero zero ).

A subject may be looked up from many stand points. The auxiliaries of point of view indicate the broader aspects of a subject e.g. 622.007 man power requirement in mining. In this auxiliaries, one more addition made. Author of work. e.g. 333.013.6.000/32911 conservative view of land reforms policy.

**Notation :**

The notation of UDC is a mixed notation. It adopts the following species of notations:

- (a) 0, 1, 2, ..... 9 – Used to indicate main classes
- (b) A, B, Z, & - Used as alphabetical Device a, b, ..... z
- (c) Punctuation marks; Colon, inverted commas, used to introduce common auxiliaries. Hyphen apostrophe used to introduce special auxiliaries.
- (d) Mathematical symbols;  
 Plus, stroke, equal, circular Used to introduce  
 brackets, square brackets common auxiliaries  
 point zero, point zero zero, etc., and special  
 auxiliaries

Due to the adoption of mixed notation, the UDC notation provides for infinite hospitality to both array and chain of classes since notation is flexible, It is possible to arrange reading materials in the way that suits individual library more readily than the notation of more rigid schemes of classification. However, no fixed citation order governs the facets auxiliaries with a subject field.

**Index :**

The UDC index is relative index constructed with much economy. It contains nearly 20,000 entries dealing with 12,000 topics in the schedules. Each facicule contains separate index in it.

The UDC is widely used at the national and international level. The central classification on Universal Classification is responsible for the supervision of UDC revision which is based on a policy of compromise. It brings out changes in UDC through “Extension and corrections to the UDC”.

**Self Assessment Questions II**

1. 6<sup>th</sup> edition of Colon Classification appeared in \_\_\_\_\_
2. Colon Classification is called as \_\_\_\_\_
3. 19<sup>th</sup> edition of DDC has \_\_\_\_\_ tables

## 2.4. Summary

The need for classification is important from the theoretical as well as practical point of view because the general systems of classification of knowledge depends on theories of knowledge. The study of literature indicates that there has not been a sufficient exchange of ideas between philosophers and specialists in Library Classification.

A variety of relations are possible between any two components of a subject. These relations can be formalized into a set of relations leading to a typology of relations. This typology of relations postulated by Ranganathan is helpful in determining the stage of development of a subject. The mode of formation of a subject affects its structure. The modes represent various kinds of relations which lead to the formation of subject in the universe of knowledge. We can also have all possible combinations of these modes.

Colon classification designed by Dr. S. R. Ranganathan is a faceted classification scheme exhibiting analytico – synthetic feature. Arrangement of documents based on such scheme would facilitate the location and retrieval of documents by the users of a library. CC has a sound the oriental base with a set of canons postulates and principles. The scheme is continuously augmented by new developments from time to time.

DDC is one of the most interesting development in the history of librarianship. It was the first scheme meant for all kinds of libraries. It was the first scheme to propose the concept of relative location in place of 'fixed location' of documents. The growing number of libraries throughout the world adopting this scheme demonstrates its qualities.

The UDC is widely used at the national and international level. The central classification on Universal Classification is responsible for the supervision of UDC revision which is based on a policy of compromise. It brings out changes in UDC through “Extension and corrections to the UDC”.

### Unit Questions

1. Enumerate and explain the different kinds of dividing the universe of subjects.
2. Explain briefly the different modes of formation of subjects
3. Explain the salient features of CC
4. Explain the role of tables in DDC
5. Explain in detail the UDC

### **Further Reading**

1. Ranganathan (S.R.) Prolegomena to Library Classification Ed. 3, 1967.
2. Ranganathan (S.R.) Elements of Library Classification, 1962.
3. Palmer (S.I.) and Wells (A.J.) Fundamentals of Library Classification.
4. Malby (A) Ed. Sayer's - Manual of Library Classification.
5. Krishankumar Theory of Library Classification, Ed.2, 1981.
6. Needham (C.D.) Organising Knowledge in Libraries, 1971.

### **Answers to Self Assessment Questions**

#### **I.**

1. Fission, fusion, lamination, loose assemblage etc.
2. Denudation
3. Several specialized studies on a particular phenomenon is known as clustering.

#### **II.**

1. 1960
2. Analytico Synthetic Classification
3. Seven



## UNIT - III

### 3.0 OBJECTIVES

After studying this lesson, the students should be able to

- i. To introduce the general theory of classification of subjects through canons propounded by Ranganathan.
- ii. To know the canons meant for development terminology for a classification scheme
- iii. To analyse the concept of postulates and facet analysis.

### 3.1. General theory of Classification:

Any subject in its inception develop slowly due to the addition of practical experiences of eminent scholars and after attaining a stage of development experts think in terms of developing general theory for the subject with a view to bring in under a well designed frame work. library Classification is not an exceptional subject from this R.S. Parkhi states the theory of Library classification has gone through two stages of evolution. In stage – 1 we were able to achieve a descriptive theory distilled out of past practices in design work: In Stage – 2, classificationists were able to formulate a dynamic theory for guideing design work.

In the beginning of the 20<sup>th</sup> century, classificationists began to evolve general theory of classification for designing new schemes. Among them, the contribution of James Duff Brown, E.C. Richardson, E.W. Hulme W.C. Berwick Sayers, H.E. Bliss. S.R. Ranganathan etc. are note worthy

J.D. Brown's theory of classification is based on "One place theory" In this theory a basic concrete theme is selected as a prime source and around it related concepts embodied in documents are grouped.

E.C. Richardson's theory enunciated that subjects are to be arranged in historical sequence and divisions of things should be on, 'likeness and unlikeness' etc.

E.W. Hulme's theory is based on mechanical assembling of materials and coordinated arrangement of subjects having literary warrant.

It was Berwick Sayers who enunciated 29 canons for classification. These canons deal with, divisions principles terminology arrangement of books by logical order, notation, index etc.

H.E. Bliss, who first evolved theory for his classification published his theories and principle in "Organization of Knowledge and the system of Science" (1928). He advocate the arrangement of subjects by collocation and the layout of universe of subjects should be on the 'scientific and educational consensus'. His theory also deal with Gradation by specialty, notation alternative location etc.

### **3.2. Three planes of works :**

In the dynamic theory of classification it has been found helpful to recognize three planes of works – namely the idea plane, verbal plane and notational plane. This separation of planes of work made it possible to isolate and solve independently the problem arising in each of these three planes. This made possible considerable progress in the theory of classification. At suitable stages, the results of the works in the three planes are correlated. In this functional division of work of classification the work in the idea plane is assigned the highest importance and the work in the verbal plane and notational plane is necessary to communicate the meaning and rank of the subjects as decided by the idea plane.

#### **3.2.1 Idea plane :**

The work in the idea plane identifies the focal idea and other component ideas of a subject. Further, the arrangement of ideas in a hierarchically structured sequence is also done in the idea plane. The work in the idea plane is of the universe of subjects and psychology of readers. Thus, based on the findings of the relevant attributes of the universe of subjects and psychology of readers. Thus the work to be done in the idea plane holds good whatever may be the species of classification purely enumerative or almost faceted , or rigidly faceted or freely faceted that is to be designed.

The work in the idea plane is guided by a set of postulates, principles and canons such as the postulates of basic subjects of fundamental categories.

#### **3.2.2 Verbal plane :**

The work in the verbal plane identifies the appropriate terms to denote the ideas incident in the specific of subject. It is guided by a set of canons such as the canons of context and currency.

#### **3.2.3 Notational plane :**

The work in the notational plane represents the rank of the subject and the components of the subject. It provided expressive notations for subjects. It is also guided by a set of canons such the cannons of simplicity, brevity and expressivity. The decision in the idea plane is paramount and the notational plane, may be taken to be like the one between a master and a servant. The notational plane should not makes its own decision on the sequence of subjects or of isolates or of facets.

### **3.3. Normative principles :**

Any science is usually based upon the formulation of a set of ‘Hypotheses’ or ‘Normative principles’. We use the theme ‘Hypotheses’ in the field of natural sciences and ‘Normative principles’ in the field of social sciences. They do not admit of being either true or false. They are used only because they are helpful in explaining the observed facts and experience, and in the derivation of deduced principles disclosing possible new facts and experiences. The hypothesis or normative principles will lose their validity

when the possible facts and experiences indicated by the deduced laws are found to be untrue. Then they are replaced by another set of hypothesis or normative principles.

### **3.3.1. Levels of Normative principles :**

As in any other science, in the science of classification also special hypothesis or normative principles are usually needed at different levels of development. For convenience, the normative principles of each level are denoted by different terms like laws, cannons, principles and postulates. These laws, cannons, principles and postulates laid down a sound foundation for the dynamic theory of library classification. The following is the convention adopted about the term to be used to denote normative principles in different contents.

#### **Law:**

In the context of a major discipline such as library science.

#### **Canon:**

In the context of divisions of the first order of the major discipline, such as book selection, classification, and cataloguing.

#### **Principles:**

In the context of divisions of the second or later order of the major discipline, such as facet sequence in classification and alphabetization in cataloguing.

### **3.3. Canons for characteristics and Canons for Succession of characteristics :**

#### **3.3.1. What is a characteristic?**

A thing, a concept or an idea is an 'entity'; quality or property of an entity is called an attribute. An entity may have various attributes. For classification, these attributes are being used as the basis. But every attribute of an entity cannot be considered for the purpose. Only those attributes which satisfy certain conditions are used as the basis for classification of entities. Such attributes are named as characterizations.

According to Dr. S. R. Ranganathan "a characteristic is an attribute or any attribute complex with reference to which the likeness or unlikeness of entities can be determined and at least two of them are unlike".

Example:

Height is a characteristic of boys.

#### **3.3.1.1. Kinds of characteristics :**

There are three kinds of characteristics. They are:

i) Natural characteristic

"A characteristic possessed in common by all the entities in the universe considered and inherent and inseparable from the entities"

Examples:

Author of a book; height of a person; age of a person; ability of a person.

ii) Artificial characteristic:

A characteristic possessed in common by the entities in the universe considered, but not necessary for their included in the universe.

Example:

Cloths worn by a person; mode of dressing hair.

iii) Division characteristic:

The characteristic used as the basis for the division of the entities of a universe.

Examples:

In the universe of books if we sort them on the base of size is a division characteristics and the books of the same size form a sub-aggregate. But all the natural characteristics could not become division characteristics.

### **3.3.1.2. Application of Characteristics :**

The aim of library classification is to show a general picture of the relationships of knowledge. And while making this scheme, the classificationist wants to show all the co-ordinate classes which may be derived from a major class. Certain rules of division are adhered to in order to ensure that as far as possible one subject can fit into only one place in the classification scheme. Otherwise entry may be under more than one head. Sayers observes, “ the achievement of an order which is useful to the reader in a chain of classification will depend upon the characteristics of division used and the order in which they are applied”.

A characteristic is chosen to divided a class of books into smaller groups, and it is considered as a quality which is common to all divisions but, appears which differentiate each. For example, history may be divided by time and within each division the time will be different.

For this purpose, we tries to find out the characteristic of the subject which is possessed by all the books of that subject. This characteristics is used as a criteria of arrangement. This quality or characteristic of division is applied to produce sub-classes in which that quality or characteristic communicated.

### **3.3.1.3. Canons for characteristics**

A characteristic used to classify a universe should satisfy the following four canons:

1. Canon of differentiation
2. Canon of Relevance
3. Canon of Ascertainability
4. Canon of Permanence

There are four commonsense canons, no scheme for classification worth considering will violate them. These canons are applicable to the classification of any universe of entities. In particular, they are applicable to the universe of basic subjects, the universe of isolated, the universe of compound subjects and the universe of complex subjects.

#### **Canon of differentiation :**

“A characteristic used as the basis for the classification of a universe should differentiate some of its entities – that is it should give rise to two classes or ranked isolates”.

This means that the characteristic chosen for the process of classification should be able to divide the entities atleast into two classes. In otherwords, the choice of characteristic is very important. If we chosen a non-possessed characteristic then the total purpose of classification will be defeated. Classification captures the similarities and within the similarities it identifies the differentiation. Thus, one of the essential feature of classification is “differentiation”.

For example, if there is need to break a large group of students into a small convenient groups, for this, if we apply “possession of nose” as an attribute we are not able to get different groups. This is an attribute shared equally by all the students and hence, with reference to it all the students are alike. On the other hand, if we use any one of sex, height, mother tongue, marks obtained in the examination as characteristic they will definitely give rise to different groups.

**Cannon of relevance :**

“A characteristic used as the basis for the classification of a universe should be relevant to the purpose of the classification”.

Relevance is something related to the goal/purpose. In the context of the library. Relevance is in relation to books and readers. That is, the readers should always be able to get their needed information that is relevant information.

Example:

- i) the purpose of classification is to divide the universe of books into convenient groups to suite the requirement of readers in the library, then the subject matter, language, author and year of publication are relevant characteristics. But the size, the colour and the quality of the paper used for the books are irrelevant characteristics.
- ii) If the purpose of classification is to divide a group of students into convenient graded groups for physical games then sex, age, height, weight and physical stamina are relevant characteristics, the purpose of classification.
- iii) If the purpose of classification is to divide universe of boys in class room into convenient graded groups for tutorial work then their intelligence is a relevant characteristic. Here, the characteristics like height, weight will totally irrelevant.

**Cannon of ascertainability :**

“A characteristic used as the basis for classification of a universe should be definite and ascertainable”.

A universe of entities may have many relevant characteristics. But all of them may not be ascertainable and definite. Cannon of ascertainability emphasizes that only the characteristics which are easily ascertainable and definite should be chosen for the division of the universe of entities.

All the characteristics in the division of the universe of entities are not sure of a characteristics. While analysis we have to find out the characteristics which is free from context. When we are not sure of a characteristics we should not choose those characteristic. If you choose such characteristics they may not be expressive even though they are relevant characteristics.

Example:

- i) For classifying the universe of authors the date of birth is ascertainable characteristic, but the date of death it not as it may not be definitely ascertainable even with the help of astrologers and palmists.
- ii) In the first 14 editions of DDC, for classifying European literature the characteristic of literary achievement is used. It divided writers as major writes and minor writers. However this is as abstract characteristic and cannot be determined quantitatively. It is very difficult to distinguish a major writer from a minor writer. More-over a minor writer may in due course become a major writer and vice-versa. Therefore, this characteristic is not definite and ascertainable. This violation of the canon of as certainability is removed from the later editions of DDC.

### **Canon of permanence :**

“A characteristic used as the basis for the classification of a universe should continue to be unchanged so long as their is no change in the purpose of classification”.

This cannon means that only those characteristics of entities which are not likely to be changed should be used to determine their likeness and unlikeness, until and unless the purpose of classification is not changed.

Example:

- i) For classifying chameleons, ‘colour’ is not a permanent characteristic. Similarly for classifying politicians their ‘political affiliation’ is not a permanent characteristic.
- ii) Journals should not be divided on the basis of characteristics like frequency, sponsorship or agency. Because the authority responsible for publishing a learned periodical often keeps changing. Here subject is the permanent characteristic to divide the universe of periodicals.
- iii) Even the graphical territories and boundaries are not permanent characteristics. Sometimes they keep changing depending upon the prevailing political conditions. The physiographical features like desert, forest, river, island, valley, mountain etc. which are permanent characteristic are change due to modern Science and Technology. Hence the division of geographical world is always a problem.

### **3.3.1.4. Canons for Succession of characteristics :**

There are three canons for the Succession of characteristics when two or more characteristics are used for classifying a universe. That is, the chosen characteristics should be used in a particular sequence and the following three canons should be observed in arriving at a correct succession order of characteristics.

1. Canon of concomitance.
2. Canon of consistent succession

### 3. Canon of relevant succession

#### **Canon of concomitance :**

“No two characteristics in the associated scheme of characteristics should be concomitant – that is, they should not give rise to the same array of subjects or of isolate ideas”.

“The concomitance” means concurrence or argument that is the state of being together. Concomitant characteristics should not be used in succession for classifying a universe into different classes, because they will always give rise to one and same class. The canon demands that whenever there are two characteristics that are concomitant to one another, only one of the two should be considered as valid.

For example,

- i) ‘Age’ and ‘Year of birth’ should not be used in succession for classifying a group of boys into different classes, because they will give rise to the same set of classes. On the other hand, age and height can be used as two successive characteristic, because they will yield different set of classes.
- ii) The date of first publication and the date of first edition of a book should not be used as successive characteristic for classifying a universe of books, because both of them will give rise to the same classes.

#### **Canon of Relevant succession :**

“The succession of characteristics in the associated scheme of characteristics should be relevant to the purpose of the classification”.

This canon demand that when two or more characteristics are chosen to divide a given universe of subjects or isolate ideas, they should be used in an order relevant to the purpose of classification.

Example:

In DDC language, form and period are the three characteristics sued in classifying the main class literature. There are six different successions in which these three characteristics can be used. But DDC has rightly chosen the following succession: language, form and period as most relevant to the purpose of the classification of books which is the convenience of the readers.

In CC language, form, author and work are the four characteristics used in classifying the universe of subjects out of the 24 different successions possible, CC has rightly chosen the following succession: language, form, author and work as the most relevant.

#### **Cannon of consistent succession :**

“The succession of characteristics in the associated scheme of characteristics should be consistently adhered to, so long as there is no change in the purpose of the classification.



It is obvious that lack of consistency will lead to confusion and defeat the purpose of classification. Once the choice is made about the sequence of characteristics, we should not deviate from it so long as there is no change in the purpose of the classification otherwise this will result in confusion.

Example:

For the universe of subjects owing with the main class history, DDC has chosen the geographical and period characteristics as the only necessary ones. It has also decided their succession has “geographical and then period”. Those who use DDC should change this decision from time to time. They should adhere to it consistently, otherwise confusion will result.

For the same universe of subjects CC has chosen four characteristics instead of two. They are community, organ of state, attribute of organ and the period. It has been decided that this is the most relevant succession. Those who use CC should adhere consistently to this decision on the succession of these four characteristics otherwise confusion will result.

For the main class Zoology CC has chosen the “species of animals and organs of animals” as successive characteristics. Those who use CC should not change the sequence from time to time so long as there is no change in the purpose of classification. This sequence should be consistently adhered to otherwise, confusion will be the result.

If “form, author, work” is the relevant succession for one language, literature then it should be relevant succession for all other language, literatures also.

A characteristic is an attribute or quality on the basis of which different groups of entities can be created from its universe. In this lesson we have discussed the various conditions to be satisfied by a characteristic and for the succession of characteristics.

### **3.3.2. Idea Plane: Canons for array and chain :**

#### **3.3.2.1. What is an Array?**

An array is defined as ‘a sequence of co-ordinate classes of a universe derived from it on the basis of a single characteristic and arrangement among themselves according to their ranks’. The classes of an array are equal and co-ordinate to one another. For example, the ‘world’ is divided on the basis of a single characteristic and the resultant classes – Asia, Europe, Africa, South Africa, North America are called the array of classes. They are arranged on the basis of their nearness.

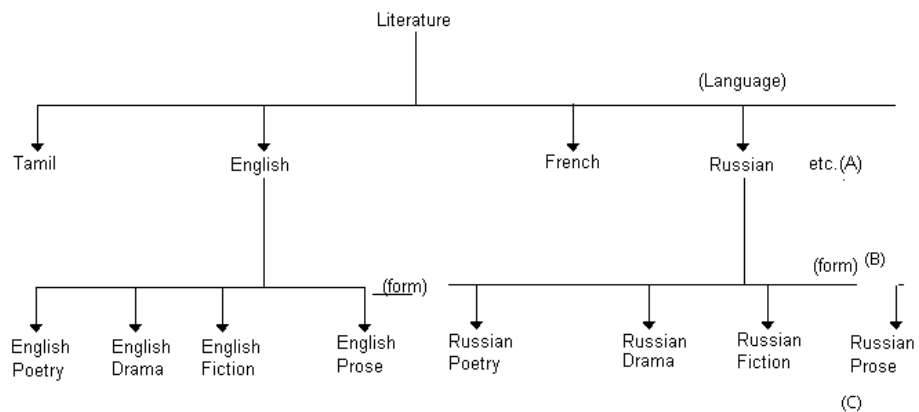
The universe of religion is divided and the resultant classes, Vedic Hinduism, Post – Vedic Hinduism, Jainism, Buddhism, Judaism, Christianity and Muhammadanism form an array of classes.

### Order of an array :

An array of classes derived on the basis of the first characteristic is called the first order array and the array of classes derived on the basis of the second characteristic is called the second order array and so on.

### Collateral arrays :

Different arrays belonging to one order are called Collateral arrays. They emerge from the second order onwards. The following figure illustrates all the points mentioned above.



(A), (B), (C) = Arrays

(Language) = First characteristic used to divide the universe 'Literature'

(Form) = Second characteristic used to divide each individual language

(A) = First order arrays – derived by applying the first characteristic.

(B) and (C) = Second order arrays – derived by applying the second characteristic.

(B) and (C) = collateral arrays – Arrays of the same order.

### 3.3.2.2. Canons for Array

Arrays are formed at every stage in the process of classification of knowledge and every order of an array is derived from a bigger whole with the help of a train of characteristics. Any sequence of classes called as an array. There are four essential conditions that should be satisfied by a sequence to be called an array of classes. They are called the canons for array. These canons should be strictly observed by a scheme for classification in the formulation of arrays. The following are the four canons.

1. Canon of Exhaustiveness
2. Canon of Exclusiveness

3. Canon of Helpful sequence
4. Canon of Consistent sequence.

**Canon of Exhaustiveness :**

“The classes of array of classes and the ranked isolates in an array of ranked isolates should be totally exhaustive of their respective common immediate universe”.

The canon demands that while classifying a universe nothing should be left out. Every entity comprised in the immediate universe should find a place in one of the classes in the array derived from the immediate universe. All the classes belonging to a universe should be individualized. That is no one class belonging to a universe should be left out in the process of division. Also any new entity added to the universe should be assigned to any one of the existing classes or to any newly formed class in the array. The implication of this canon is that an array should be made to accommodate any number of co-ordinate classes according to the need.

**Example:**

If the universe of literature is divided on the basis of language all the literatures each based on one language should be enumerated. No one particular language literature should be omitted.

In DDC 14<sup>th</sup> edition after eight functions of local government the residual class “other topics” is added at the end to make the array totally exhaustive. The other device formerly satisfied the canon of exhaustiveness but the classes included in it are left without being individualized. This is because of the notational rigidity which can be accommodated only is limited number of classes in an array. In 17<sup>th</sup> edition. This rigidity of the national system was partly removed by recognizing eight the digit group, 97 to 91 as co-ordinate with the digits 1 to 8 and thus breaking the “other class” into eight more classes.

On the other hand, in CC any number of classes can be enumerated in an array until the immediate universe becomes totally exhaustive. This is because of the notational system of CC which takes the help of devices like octave or sector device.

**Canon of Exclusiveness :**

The classes in an array of classes and the ranked isolates in an array of ranked isolates should be mutually exclusive.

According to this canon an entity considered to be sub division of one class should not be considered as a sub – division of another class. In other words no two classes of the array can overlap or have a class in common. To secure this the classes of an array should be derived from its immediate universe on the basis one and only one characteristic. If any of the entities are common to two or more classes the canon of exclusiveness is violated the result

will be “cross classification” or cross division and the array will be “mixed array”.

Example:

In DDC 19<sup>th</sup> edition this canon is violated by applying more than one characteristic for deriving the array of classes, Following is the division of the subject 540 – Chemistry

541 – Physical and Theoretical chemistry

542 – Laboratories etc

543 – General Analysis

544 – Quantitative Analysis

545 – Qualitative Analysis

546 – Inorganic chemistry

547 - Organic chemistry

548 - Crystallography

549 – Mineralogy

#### **Canon of helpful sequence :**

“The sequence of the classes in an array of classes and of the ranked isolates in an array of ranked isolates should be helpful to purpose of those whom it is intended”.

It is true that what is helpful to one purpose may not be helpful to another. In other words, helpfulness to one sequence will vary with the users of the scheme for classification. It is not possible for a scheme classification to provide a sequence to provide a sequence which is helpful for all users. The scheme for classification should be designed to meet the purpose; of the largest number of users. The scheme for classification should be designed to meet the purpose; of largest number of users.

Examples:

If there are six classes in an array, this array of classes may be arranged in 720 different possible ways ( $6*6*4*3*2*1 = 720$ ) out of this 720 different possible sequence only one particular sequence which satisfy maximum number of users should be chosen. Dr. S. R. Ranganathan has formulated a number of principles that will determine the helpful sequence of an array called Principles of Helpful Sequence.

#### **Canon consistent sequence :**

“Whenever similar class or ranked isolates occur in different arrays their sequence should be parallel in such arrays whenever assistance on such parallelism does not run counter to other more important requirements”.

Application of this canon will save time and energy. It will help both the classifier and the user of the library by reducing the load on memory.

For example: If we arrange the forms of one language literature in a particular sequence, the same sequence of forms should be maintained in other languages also.

1. English Poetry – English Drama – English Fiction.
2. Tamil Poetry – Tamil Drama – Tamil Fiction.
3. French Poetry – French Drama – French Fiction.

There are two ways of securing consistent sequence.

1. Automatic conformity.
2. Parallel sequence.

**Automatic conformity :**

This canon is automatically satisfied by using one and the same schedule to denote an array of classes, through it occurs in different places. For example, in colon classification separate schedules are provided for space, time and common isolates. They give the same sequence whenever they are attached as shown below.

V4	History of Asia	X. 4 Economics of Asia
V5	History of Europe	X. 5 Economics of Europe
V6	History of Africa	X. 5 Economics of Africa
V5	History of America	X. 5 Economics of America

The sequence Asia – Europe Africa – America is secured automatically in both History and Economics.

**Parallel Sequence :**

The sequence Land – water – Air occurs in several arrays – wherever it occurs, this sequence is maintained in colon classification.

<u>Mainclass</u>	<u>Land</u>	<u>Water</u>	<u>Air</u>
Physics	Solids	Liquids	Gases
Mathematics	Dynamics	Hydrodynamics	
			Aerodynamics
Economics	Land-Transport		Water-Transport
			Air-Transport

### 3.3.2.3. What is a Chain?

“A chain is a sequence of classes in successive sub – ordination each one being subordinate to the proceeding one”. It is conveniently used for tracing of an ultimate class step by step from its origin.

Example:

CC	DC
GI = Life	500 – Pure Sciences
GII = Cell	540 – Chemistry
GII3 = Nucleot	541 – physical & theoretical chemistry
GII35 = Nucleoli	541.3 – Physical Chemistry
GII352 = Plasmosome	541.35 – Photo Chemistry
	541.351 – Energy transformation

#### 3.3.2.3.1. Canons for chain :

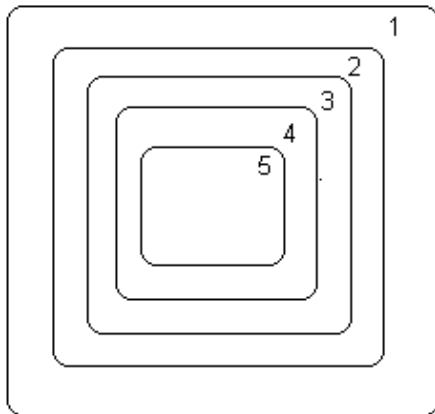
Each chain of classes in a scheme of classification should satisfy the following two canons,

1. Canon of decreasing extension.
2. Canon of modulation.

#### Canon of decreasing extension :

While moving down a chain from its first link to its last the extension of the classes or the ranked isolates, as the case may be, should decrease and the intension should increase at each step.

In general this canon states that the first link of a chain of classes denotes a wider subject and it should be place before a narrower class. In other words, the succeeding classes should have more departments than the proceeding ones. This canon can be equated with the fundamental principle. “General before special”. This canon can be explained in terms of the two world “, Examination and “Intension”. These two terms have an inverse relation to one another. “Extension” is a Quantitative measure and “intension” is a qualitative of a class.



1. 300 - Social Science
2. 330 -- Economics
3. 331 --- Labour
4. 331.4 -- Women Labour
5. 331.42 -- Wages for women labour

In the chain of classes in DC, 19<sup>th</sup> edition, we find “Social science” comprises the great number of entities (ie, small classes) and hence it forms the first link of the chain and it is the class of the greatest extension of the chain. Similarly, the class wages for women labour’ is derived with the great number of characteristics and hence it is the class of the greatest intension and forms the last link of the chain. It can be said that the extension of the classes decreases and the intension increases while moving down the chain from its first link to its last and thus, this chain satisfies the canon of decreasing extension. The decreasing extension of classes in a chain is determined by the relevant succession of characteristics.

- 1 – Word
- 4 – Asia
- 44 – India
- 441 – South India

In other words the canon prescribe as a rule as to how a chain of classes should be derived.

**Canon of Modulation :**

“A chain of classes or of ranked isolates should comprise one class or one ranked isolates as the case may be of each and every order that lies between the orders of the first link and the last link of the chain”.

The previous canon states that “how a chain of classes should be derived. The purpose of the canon is to specify as to what should be included in the various links of a chain. In other words it states what should comprise a chain from its first link to last link. The phrases ‘each and every order’ indicates that no one particular class in a chain should fail to find a place in the relevant links. The canon instructs that no class in a chain between its first link and the last link should be left out.

Example:

- i) In the chain of classes father – son – grandson, the intermediate class ‘son’ should not be ignored.
- ii) In geography by applying the characteristics like continent Nation – State – district, we get the following chain Asia – India – Tamil Nadu – Madurai. According to the canon of modulation, a scheme of classifications should not ignore any of the class like India or Tamil Nadu if so the scheme will be defective.
- iii)
- iv) Compare the following two chains:

CC		DDC
X. Economics	330	Economics
X7 Public Finance	336	Public Finance
X72 Taxation	3362	Taxation
X729 Indirect Taxes	336.27	Other Taxes
X7299 Stamp Duty	337.271	Indirect Taxes
	346.272	Stamp Duty

The example in CC satisfies the canon. Here all classes are modulated to fall in successive links. In DDC this canon is not satisfied because “Indirect Taxes” and “Stamp duty”, through they are derived on the basis of two different characteristics. They are made to fall as co-ordinate classes of any array. Canon modulation will be satisfied by the choice of relevant characteristics and their application in relevant succession.

Arrays and chains form the basis of library classification. In this lesson the various conditions to be statistical by any array and chain are discussed.

#### **3.3.2.4 Idea Plane : Principles of Helpful sequence :**

The term “Principle” is used to denote normative principle in the context of divisions of the second or later order of the major disciplines. As the helpful sequence is the division of the subject ‘classification’. The normative principle related to helpful sequence are called ‘Principles of Helpful Sequence’. We have totally eight principle eight principles in general. Some general principles have been divided further to have more specific principles of helpful sequence are discussed in detail.

#### **Principle of Later – in – time :**

“If the subjects in an array of subjects or the isolates in an array of isolates have originated in different times, they should be arranged in a parallel progressive time sequence, except when any other overwhelming consideration rules it out”.



Example:

- i) In classifying the universe “Religion” CC 6<sup>th</sup> edition arranges Religion in the following time sequence of origin.  
Q1 – Vedic Hinduism  
Q2 – Post Vedic Hinduism  
Q3 – Jainism  
Q4 – Buddhism  
Q5 – Judaism  
Q6 – Christianity  
Q7 – Islam
- ii) CC 6<sup>th</sup> edition uses the principle of later in – time arranging authors in a particular literature.
- iii) The use of chronological device in CC 6<sup>th</sup> edition secures automatic conformity to the principle of later in time.

**Principle of later – in – evolution :**

“If the subjects in an array of subjects or the isolates is an array of isolates belong to different stages of evolution, they should be arranged parallel to the evolutionary sequence except when any other overwhelming consideration rules it out”.

Example:

- i) In classifying the universe “specials” in the main class medicine CC 6<sup>th</sup> edition arranges the specials in evolutionary sequence as follows:  
L – Medicine  
L9B – Embryo  
L9C – Child  
L9D – Adolescent  
L9E – Old age
- ii) In classifying the universe “system of government” in the main class W – Political science CC – 6<sup>th</sup> edition arranges the classes in evolutionary sequence as follows;  
W – Political science  
W1 – Anarchy  
W2 – Primitive  
W3 – Feudal  
W4 – Monarchy  
W5 – Oligarchy  
W6 – Democracy

### **Principles of Spatial Contiguity :**

“If the subjects in an array of subject or the isolates in an array of isolates occur contiguously in space roughly along a unidirectional, line, or a circle they should be arranged in a parallel spatical sequence, except when any other overwhelming consideration rules it out”.

This is really a bundle of principles. Eight of these principles occur in 4 antithetic pairs except the last principle “principle of away from position”. The choice between the antithetic pairs will depend upon the context, if they are not equally helpful. If they are equally helpful either may be used with due respect to the “canon of consistent sequence”.

### **Principles of entities along vertical line :**

#### **Principle of Bottom Upwards :**

“If the subjects in an array of subjects or isolates in an array of isolates can be conveniently taken to occur along a vertical line they may be arranged from bottom upwards, if it is helpful”.

Example:

In the main class I – Botany, CC – 6<sup>th</sup> edition arranges the parts of a plant according to this principle as follows:

- I, 13 – Root
- I, 14 – Steam
- I, 15 – Leaf
- I, 16 – Flower
- I, 17 – Fruit
- I, 178 – Seed

#### **Principle of Top Downwards :**

“If the subjects or isolates in an array of isolates can be conveniently taken to occur along a vertical line, they may be arranged from top downwards, if it is helpful”.

Example:

DC – 19<sup>th</sup> edition arranges the organs of human body according to this principle of top downwards as follows:

- 611.91 – Head
- 611.92 – Face
- 611.93 – Neck
- 611.94 – Thorax
- 611.95 – Abdomen
- 611.96 – Pelvic x Perineal region
- 611.97 – Upper extermities
- 611.98 – Lower extremities

## **Principles for entities along a horizontal line :**

### **Principle of left to right :**

“If the subjects in an array of subjects or the isolates in an array of isolates can be conveniently taken to occur along the horizontal line, they may be arranged from left to right, if it is helpful”.

### **Principle of right to left :**

“If the subjects in an array of subjects or the isolates in an array of isolates can be conveniently taken to occur along the horizontal line, they may be arranged from right to left, if it is helpful”.

## **Principles for entities along a circular line :**

### **Principle of Clockwise Direction :**

“If the subjects in an array of subjects or the isolates in an array of isolates can be conveniently taken to occur along the horizontal line, they may be arranged in the clockwise direction, if it is helpful”.

Example:

The space isolates in CC are arranged according to the principles as follows.

- 4– Asia
- 41 – China
- 42 – Japan
- 43 – South – east Asia
- 44 – India
- 45 – Iran (Persia)
- 46 – Arabian Peninsula
- 47 – Asia minor
- 48 – Siberia

### **Principle of Counter – Clockwise Direction :**

“If the subjects in an array of subjects or the isolates in an array of isolates can be conveniently taken to occur along the horizontal line, they may be arranged in the counter – clockwise direction, if it is helpful”.

Example:

The 12 Zodiac signs may be arranged in the following sequence.

1. Aries
2. Taurus
3. Gemini
4. Cancer
5. Leo

6. Virgo
7. Libra
8. Scorpio
9. Sagittarius
10. Capricornus
11. Aquarius
12. Pisces

**Principles for entities along a radical line :**

**Principle of periphery to center :**

“If the subjects in an array of subjects or the isolates in an array of isolates can be conveniently taken to occur along the horizontal line, they may be arranged from periphery to center, if it is helpful”.

Example:

The constituents of Egg may be arranged according to this principle as follows:

Egg – Shell. Shell membrane,  
Shell membrane 1  
Shell membrane 2  
Albumen  
Chalaza  
Yolk, Blastoderm

**Principle of center to periphery :**

“If the subjects in an array of subjects or the isolates in an array of isolates can be conveniently taken to occur along the horizontal line, they may be arranged from center to periphery, if it is helpful”.

Example:

The organs of human body may be arranged according to this principles as follows:

L 82 – Bone  
L 83 – Muscle  
L 84 – Connectivity tissue  
L 85 – Skin  
L 86 – Hair etc.

**Principle of away from position :**

“If the subjects in an array of subjects or the isolates in an array of isolates can be conveniently taken to start along the horizontal line, they may be arranged from the starting point along the diverging line, if it is helpful”.

Example:

- i) In both CC – 6<sup>th</sup> edition and DDC – 19<sup>th</sup> edition the planets in the canonical class Astronomy are arranged according to this principle as follows:

Planets	CC 6 <sup>th</sup> edition	DDC 19 <sup>th</sup> edition
Mercury	B941	523.41
Venus	B942	523.42
Mars	B943	523.43
Asteroid	B944	523.44
Jupiter	B945	523.45
Saturn	B946	523.46
Uranus	B947	523.47
Neptune	B948	523.481
Pluto	B9491	523.482

- ii) Microwave Communication Station – by position  
 Transmitting Station  
 Repeater Station 1  
 Repeater Station 2  
 Receiving Station

**Principles for Quantitative measures :****Principle of Increasing Quantity ;**

“If the subjects in an array of subjects or the isolates in an array of isolates admit of quantitative distinction, they may be arranged according to their increasing quantity, if it is helpful”.

Example:

- i) CC – 6<sup>th</sup> edition arranges the resulting classes of “Geometry” on the basis of “Number of dimensions” according to this principle.  
 Line  
 Plane  
 Three dimensions  
 Four dimensions

Five dimensions

.  
. .  
. . .

n dimensions

- ii) The resulting classes of the universe of “Boys in class room” on the basis of ‘Age’ may be arranged in the increasing sequence of age rather than in any random sequence.

**Principle of Decreasing Quantity :**

“If the subject in an array of subjects or the isolates in an array of isolates admit of quantitative distinction, they may be arranged according to their decreasing quantity, if it is helpful”.

Example:

In the main class – 2 (Library Science) the types of Libraries are arranged according to this principle.

- 211. World Library
- 212. National Library
- 213. Regional Library
- 214. State Library
- 215. Divisional Library

Here, the quantity is the area or the size of population served,

**Principle of Increasing Complexity :**

“If the subjects in an array of subjects or the isolates in an array of isolates show different degree of complexity, they should be arranged parallel to the sequence of increasing complexity except when any other over whelming consideration rules it out”.

Example:

- i) In classifying the universe “Linguistics” on the basis of the characteristic “Element”, CC – 6<sup>th</sup> edition arranges the resulting subjects according to this example.

- Isolated Sound
- Syllable
- Word
- Phrases
- Clauses
- Sentences
- Piece of composition

- ii) Microscope
  - Dissection microscope
  - Compound microscope
  - Phase – contrast microscope
  - Electron microscope

**Principle of Canonical Sequence :**

If the subjects in an array of subjects or the isolates in an array of isolates are traditionally referred to in a specific sequence, although no underlying principle is discoverable, it will be convenient to this traditional sequence.

Example:

In CC the traditional divisions of a universe are known as canonical classes. Both in CC and DDC certain array of classes are arranged according to the principle of canonical sequence.

In CC 6<sup>th</sup> edition the classes in the following arrays are in canonical sequence.

- i) The divisions of the main class “Mathematics, Arithmetic, Algebra, Analysis, Trigonometry, Geometry, Mechanics, Physico – Mathematics, Fundamentals, Astronomy.
- ii) The divisions of the main class “Physics” – Properties of Matter, Sound, Heat, Light, Electricity, Magnetism and Cosmic Hypothesis.

In DDC the 19<sup>th</sup> edition the isolates of the following arrays are in canonical sequence.

- i) The divisions of the main class ‘Law’ – International law, Criminal Law, Martial Law, Private law and Church Law.
- ii) Fruits in the main class, ‘Agriculture’ – Pome fruits, stone fruits, Citrus fruits, Minor fruits, Nut fruits, Palmaceous fruits and small fruits.

**Principle of Literary Warrant**

“The subjects in an array of subjects or the isolates in an array of f isolates may be arranged in the sequence of the decreasing quantity of the documents published or anticipated to be published on them, except when any other overwhelming consideration rules it out”.

The principle is also known as “principle of favoured category”.

Example:

CC – 6<sup>th</sup> edition in the main class “Agriculture”, the food plants are arranged according to this principle. “Rice” having greater literary warrant is put first; “Wheat” comes next. The other food plants are arranged in the decreasing sequence of quantity of publications available or anticipated to be available on them as follows.

J 380 – Seed as food  
J 381 – Rice  
J 382 – Wheat  
J 383 – Oat  
J 384 – Rye  
J 385 – Corn  
J 386 – Barley  
J 386 – Millet

**Principle of Alphabetical Sequence :**

When no other sequence of the subjects in an array of subjects or the isolates in an array of isolates is more helpful, they may be arranged alphabetically by their names current in the international usage.

Example:

- i) In CC - 6<sup>th</sup> edition, literary works of an author can be arranged according to this principle. Take for example the following works of William Shakespeare.
- 0111, 2J64, H – Hamlet  
0111, 2J64, J – Julius Ceaser  
0111, 2J64, K – King Lear  
0111, 2J64, M – Macbeth  
0111, 2J64, O – Othello
- ii) The following examples are from the Main class Engineering (D)
- |        |                   |
|--------|-------------------|
| D5132  | - Motor Truck     |
| D5132B | - Benz Truck      |
| D5132F | - Ford Truck      |
| D5132H | - Hindustan Truck |
| D5133  | - Motor Car       |
| D5133B | - Benz Truck      |
| D5133F | - Fiat Truck      |
| D5133S | - Standard Truck  |

The sequence of classes in an array of classes should be helpful to maximum number of users. In this lesson we have discussed the various principles formulated by Dr. S. R. Ranganathan to determine the helpful sequence of classes in an array.

**Self Assessment Questions I**

1. The three planes of works are \_\_\_\_\_
2. What is characteristic ?
3. Give an example for an array.



### **3.4. Verbal Plane: Canons for verbal Plane / Terminology**

#### **3.4.1 Verbal Plane :**

For convenience, Dr. Ranganathan divided the activities of classification into three different areas called 'planes' and the verbal plane is one which deals with the work of identifying appropriate terms to appropriate terms to denote the ideas which are identified by the idea plane. That is, this plane deals with terms to denote the identified idea.

#### **3.4.2. Need for glossary of technical terms :**

It is necessary to have a glossary of technical terms for each subject, because of the following reasons.

##### **i) Vagueness in the meaning of words**

Many of the ordinary words in any language are notoriously vague. Even technical books contain words that do not convey precise meaning. The vagueness in the meaning of words will give rise to several interpretations. For eg (i) It is not easy to decide the exact meaning of the word 'Democracy', further it is difficult to decide whether a given society is a 'democracy' or not. (ii) It is difficult to decide whether certain micro organisms are 'animals' or "plants". (iii) The words 'right' and 'duty' are vague.

##### **ii) Creation of new terms**

This is a second difficulty as every language is dynamic, new words are created as old words become obsolete; and new meanings are given to old words. Some expressions are referred by their acronyms and they become words in course of time. Eg: LASER Light Amplification Simulate by Emission of Radiation. The word 'Physics' is given for the old word "Natural Philosophy". The growth of words can be illustrated by observing the total number of words in each different editions of English dictionary. Every new edition will have atleast 1000 more terms than its previous edition.

##### **iii) Incidence Homonym**

One and the same term is used with two or more meanings. Such a term is Homonym. Homonyms exists in a language, because of availability of less number of terms than the number of unit ideas to be denoted by them. Therefore, one word is used to denote more than one idea. For eg the word 'morphology' gives different meanings in different context.

##### **iv) Incidence of synonyms**

Synonym means two or more words giving one and the same meanings. The dynamic nature of language produces more synonyms. Presence of synonyms is another reason which warrants a glossary of technical terms. Eg. The words 'Acoustics' and 'sound' are synonyms. In classification the concept or the idea of sound should be denoted by either one of the terms.

### **3.4.3. Canons for verbal plane or terminology**

As a result of lack of proper control of creation of words in a language one and the same word is used to denote more than one concept and the same concept is denoted by more than one word. Also, sometimes suitable terms are not found available in a language to denote a particular concept. But terms used in a scheme for classification should be free from these defects. They must be clear and comprehensive; they should always carry the exact meaning of the subject under consideration. Ranganathan has given four principles relating to terminology to be observed in the construction and use of a scheme for classification. They are called canons for work in the verbal plane or canons for terminology.

The following are the four canons for verbal plane.

1. Canon of Context
2. Canon of Enumeration
3. Canon of Currency
4. Canon of Reticence

#### **Canon of Context**

The denotation of a term in a scheme for classification should be determined in the light of the different classes or ranked isolates of order (upper links) belonging to the same primary chain as the class or the ranked isolate denote by the term in question.

The need for this canon is due to the use of one and the same term in many classes in different contexts. Therefore, when such a term is found as a predominant catchword in the title of a document, the question arises as to under which of the many classes where the term is enumerated, it should be classified.

This canon means that the denotation or naming of each concept or idea and its place is determined in the light of its parent classes. That is the meaning of a certain term should be understood by its relation to the relevant class in the upper links of the chain.

For eg. The term 'Physiology' is enumerated under the main classes Botany, Agriculture, Zoology, Animal Husbandary and Medicine if we have a document within the term 'Physiology' as the predominant catch – word in its title, we should not put it into any one of these classes at random. When deciding the class number of the document, we must see the context in which the term is used in the document agrees with the context in which it is used in the schedule.

In short, the canon demands that the ultimate place of a term denoting a class or an isolate idea is decided in the light of its upper class. This canon directs the classification as to where a class should be placed.

### **Canon of Enumeration**

“The denomination of a term should be determined in the light of the sub – classes of the lower links”.

The previous canon directs where a certain term should be placed. This second canon demands that the place of each term should be determined by what it comprehends (i.e.: by what it covers). In other words, the scope of each term in the scheme for classification should be decided in the light of the different classes of lower links in the chain emitted by the term.

For eg. In DDC 19<sup>th</sup> edition, under the subject ‘Philosophy’ the class ‘Psychology’ is enumerated, it is a universal truth that the study of ‘Psychology’ does not come under ‘Philosophy’. Further, ‘Psychology’ itself is a separate study and it is not coordinate of Philosophy. Therefore, the enumeration of the class “Psychology and Philosophy” is not correct.

This canon imposes a control on classificationists that while enumerating the lower classes of a term, care should be taken not to list unrelated classes under it.

### **Canon of Currency**

“The term used to denote a class or ranked isolate in a scheme for classification should be the one current among these specializing in the subject field covered by the scheme”.

This canon has two implications, firstly, the term chosen at the time of the design of a scheme of classification should be one which is currently in usage. Secondly those terms that become obsolete should be changed.

Eg: The term ‘Sociology’ in the sence of ‘Social science’ was by DDC in the earlier editions. But from 15<sup>th</sup> edition, DDC appropriately used by the term ‘Social sciences’ and ‘Sociology’ was given as one of its subdivisions. Thus, DDC correctly to the canon of currency.

In the first four editions of CC the term ‘Labour’ was used to denote problems in ‘Economics’, but in all later editions CC used a currently accepted term ‘Personnel management’ for ‘Labour problems’.

### **Canon of Reticence**

The term used to denote a class or a ranked isolate in a scheme for classification should not be critical, that is, not to express any opinion of the classificationists.

The canon demands that the classificationists should only those terms that are descriptive, colourless, unambiguous and uncritical.

Eg. In earlier editions of DC, the term ‘minor authors’ was used in literature schedule. It is not correct on the part of the classificationists to classify literary men as ‘major’ and ‘minor’. This is a violation of the canon of reticence. It is quite likely that who was once a minor port may become a major poet later. From its 16<sup>th</sup> edition the DDC has dropped this term and used ‘other

authors'. In CC all authors in literature are treated equally because they are individualized by chronological device.

The work of verbal plane is an important one which identifies standard terms to denote the identified ideas by one idea plane. In this lesson we have discussed the need for a glossary of technical terms and the four canons which are useful for the verbal plane.

### **3.5. POSTULATES FOR CLASSIFICATION**

#### **3.5.1. What is a Postulate?**

A postulate is an assumed statement which is a fact or an occurrence or a thing or event. The terms 'true' or 'false' are not applicable to postulates. We can only apply the postulates for their usefulness, helpfulness is to be checked up by verification of the new results predicted on their basis and by their conformity with the new experience coming to light from time to time. S.R.Ranganathan has used the postulational approach very effectively in library classification. A set of postulates are used in the process of facet analysis. These postulates provide an algorithm to facet analysis classification becomes efficient with adoption of postulational needed. In the following sections two postulates namely, postulate of Fundamental categories are discussed.

#### **3.5.2. Postulate of Basic Subject :**

The postulate is "every subject has a basic facet / subject. Every classification scheme organises its design or structure on the basis of the subjects accepted by peer group. S.R. Ranganathan also enumerates in CC the main classes & the canonical classes on this basis. He however introduces the concept of "Basic subject as the context specifying facet. In other works, the basic subject is assumed refers to a discipline or sub discipline, A basic subject is assumed to emerge due to specialization of knowledge. For example all the following are basic subjects.

Chemistry, Biology, Zoology, Medicine – Traditional main subjects  
Super conductivity, Fibre optics, Artificial Intelligence - Newly emerged subjects by specialization

As the basis subject is a context specifying facet every isolate idea will have to be attached to it. This method if useful, as the basic subject concept collects all documents on the chosen subjects and displays them in a helpful order.

To identify the Basic subject of a subject, general knowledge of the schedules is necessary. The Basic subjects may be either explicit or implicit in a subject.

#### **Ex : Explicit**

<u>Title</u>		<u>Basic Subject</u>
1. Treaties on coal mining	-	Mining
2. Agriculture disease	-	Agriculture

3. Text book on Indian history - History

**Implicit**

- 1. Structure of Protein - Chemistry
- 2. Care of cows - Animal Husbandary
- 3. Income Tax - Economics

**3.5.3. Postulate of fundamental Categories :**

This postulates says that ‘there are five fundamental categories-namely, Personality, Matter. Energy, Space &Time" - PMEST.

After identifying Basic Subject, the analysis of isolate idea owing with the Basic subject has to be done systematically. It has been found that every subject has its different aspects and all these aspects together present the whole subject. That is every subject has a different categories of ideas. Each one of these categories can be recorded as a facet of the particular subject.

While designing CC S.R. Ranganathan found that there is a unity of ideas. Although different subject have special facets to them, in each subject there is a corset of ideas that are central to every aspect of study of that subject. This led SRR to give postulate of fundamental categories. Following is example of some Basic Subjects and the facet.

Basic Subjects	Facets				
	1	2	3	4	5
1. Library Science	Type of Libraries Eg: (Research Libraries)	Materials (Books)	Activity (Classification)	City (Madurai)	Year (1990)
2. Botany	Natural groups of plants Eg: (Flowering plants)	Property (Colour, Odour)	Structural (Study Morphology)	India	Year (1890)
3. History	Community Eg: (Indians)	Activities (Freedom Struggle)	Period (1910 - 47)		

Each of the facets going with the basic subjects (above table) can be recorded as a manifestation of one or other of the Five fundamental categories - PMEST.

## **Personality**

[P] Isolates are the central theme focus of any subject. All other isolates (MEST) are related to the central focus.

Ex : Crops in Agriculture.

Natural group of plants in Botany.

Animals in Zoology

Substances in Chemistry

Social groups in sociology.

## **Matter**

[M] is commonly understood as material, substance or commodity. Matter ranges from chemical elements or raw materials to finished product. According to SRR (M) isolates are properties of things. Persons etc. isolates such as intensity, quality etc. are (M) isolates. Therefore, there two groups of Matter.

1. Matter Material - (MM)

2. Matter Property - (MP)

Ex : Stainless steel vessels for cooking (MM). Density of solid (MP)

## **Energy**

(E) The energy category generally covers “action” of entities.

Ex : Removing, determining, Investigating

## **Space**

(S) This categories covers the land areas like continents, Countries States, Districts, Taulks, Cities, Towns, Villages; Geographical zones like arid zones, Tropics etc.

E x:

Textile industry in India

National Library of Britain

Agricultural crops in Arid zones

Telugu – Ganga projects

## **Time**

(T) This category covers concepts such as Millenium Century, Decade, year, month, day; Also covers seasons, conditions caused by climate and weather such as dry, wet, snow, storm.

Ex:

Libraries in 1980's

Night journey by bus

Scientific advancement in 20<sup>th</sup> century

Postulational approach provide a systematic classification. In this lesson we have restudied the two postulates of S. R. Ranganathan namely, the postulate of Basic subject and the postulate of Fundamental categories.

### 3.6. FACET ANALYSIS

The division of knowledge proceeds in successive steps. At the first stage knowledge is divided into traditional classes like Maths, Physics etc. which are called the main classes. In the second stage different facets etc. which are likely to present in each main class are marked out. The third stage involves the recognition of the facets and relating each facet to the fundamental category to which it belongs. The second and third stage which involves the process of identifying the facets and determining the measure of their incidence in a specify subjects is called facet analysis. In short facet analysis basis of a subject and the exact measure of their incidence in each facet is determined.

For example, let us consider the subject History. It contains numerous entities, a representative of which is given below. India 20<sup>th</sup> century – America - Archaeology – 19<sup>th</sup> century constitution Britatin. Those entities may be individualized by assigning a number in the linear order. There is another method for individualizing them. A closer examination of them will reveal that there are three types of facets or groups into which all these entities could be grouped.

Group I	Group II	Group III
India	Constitution	19 <sup>th</sup> century
America	Archaeology	20 <sup>th</sup> century

The facet in each group or facet could be arranged in a helpful order, the three groups of the three facets themselves can be arranged according to the postulates that will give a more meaning helpful and useful sequence.

#### **Definition for Facet Analysis :**

Facet analysis is a mental process by which the possible facets or train of characteristics which can form the basis of classification, of a subject and the exact measure in which the attractive concerned are incident in each facet of the subject and the exact measure in which the attractive concerned are incident in each facet of the subject is determined. It is an analysis of a subject into all its facets in a most helpful sequence according to the postulate. Principles formulated for this purpose.

#### **Definition for Facet, focus :**

Facet is the totality of isolates, each one of which can itself be attached to a specific basic class, and which are enumerated together in a schedule in a shedule as possible manifestation of a particular fundamental category in a specified level of a specified round.

Focus is a genetic term to denote an isolate idea. For example ‘language’ is a facet and ‘English’ is an isolate idea in the language facet. Space is a facet and India is an isolate idea in the space facet.

### **Steps in Facet Analysis :**

The study of facet analysis involves the following three major issues: Number of facets or categories in a main class, Sequencing the facets and Principle of Inversion.

#### **Number of Facets or categories in a main class**

Dr S.R. Ranganathan has postulated that there are only five categories groups basic to the division of main class. They are called fundamental categories. They are Personality, Matter, Energy, Space and Time (PMEST). Any entity in the world where conceptual is the manifestation of either one or more of those fundamental category. To put more precisely all isolates of the universe of knowledge, at the level of their germination takes root either from one or more fundamental categories, each and every main class is the manifestation of one or more of the fundamental categories. Each category or facet may be considered as a dimension of aspect of a main class. These categories that are manifested in a main class and arranged in the order of decreasing concreteness becomes the facet formula. The identification of a main class against these categories is the greatest contribution by the Indian school of Librarianship.

#### **Sequencing the Facets**

After analysis of the Subjects into their facets, an order of synthesis of facets should be established to help document storage and retrieval. In fact the facet analysis and facet sequence are the two sides of the same coin, the one has no purpose without the other.

Now the question arises as to what should be the sequence of facets? Is there are three facets, then there are six ways of arranging them. We have to choose only one among the various choices available. To select the particular sequence, the various choices are available. To select the particular sequence, the following, Postulates and principles are used,

Postulate of concreteness

Postulate of Round and levels

Cow – calf principle

Wall – picture principle

Whole organ principle

Act and – action – actor – tool principle

#### **Postulate of Concreteness**

The five fundamental categories fall into the following sequence when arranged according to their decreasing concreteness as PMEST.

This postulate says that the sequence of fundamental categories is fixed and is in decreasing concreteness. If we move from [P] to [M] that is [P] is more concrete [M] is little less concrete [T] is least concrete.



## Postulates of Rounds and Levels

If there are only five facets in a subject, each of them being regarded as manifestation of one or other of the five fundamental categories of PMEST. There will be no difficulty in their analysis and their synthesis. But if some facets occur more than once in a subject then the facet sequence has to be decided with the help of some postulates. They are postulates for Rounds and Levels.

- i) when [E] occurs more than once in a subject, they can be assigned to round 1, [E] or to round 2 [2E] etc.
- ii) When [P] occurs more than once in a subject they can be assigned to round 1, [P] or to round 2[2P] etc.
- iii) When [M] occurs more than once in a subject they can be assigned to round 1, [M] or to round 2[2M] etc.
- iv) When [P] occurs more than once in a subject they can be assigned to different levels, we may denote them as follows

[P] First round first level of [P]

[P2] First round second level of [P]

[2P] Second round first level of [P]

[2P] Second round second level of [P]

v) Similarly for [M]

vi) [S] and [T] can occur only in the last round

vii) [S] can occur in more than one levels (S), (S2) etc.

viii) [T] can occur in more than one levels (T), (T2) etc.

ix) Within any round the different levels of (P) occur constructively. So also with the levels of (M), (S) and (T) respectively

x) Within any round the sequence of groups of the fundamental categories is as follows.

(P) group, (M) group, (E) group, (S) group, (T) group. Some examples are rounds and levels:

(1E) . L .

Identifying short comings in the behaviour of children for rectifying them (2E)

Diagnosis and treatment of cancer

(1E) (2E)

## Cow – calf principle

There are two facets A and B in a specific subject and if the nature of the two facets is such that they should not be separated though they are distinct and separable, they should be kept together in the same round. Even as a milk

cow and its uncanny calf are not usually separated. This principle is applicable wherever we come across two or more facets in the same round. Consider the title “Enforcement of the functions of the President of India” Here we have isolates belonging to the four facets namely India, president, function and enforcement. Here India, president and function belonging to the first round and they should not be separated and carried to the second round. The sequence between the three facets themselves is determined by the wall picture principle (i.e) function exist only if there is a president. Hence president should come first.

### **Wall - Picture Principle**

Two facets ‘A’ and ‘B’ of a subject are such that the concept behind ‘B’ will not be operative unless the concept behind ‘A’ is considered. Even a moral picture is not possible unless the wall exists to draw upon then the facet ‘A’ should proceed the facet ‘B’. The principle is applicable wherever there are two facet, whose nature is like that of a moral painting can't exist without a wall. For example in the specific subject ‘cure of disease’ the concept behind 'cure' is not operative unless the concept behind the term cure disease. Here the facets will be into following sequence Disease, cure.

### **Whole organ principle**

If in a subject facet ‘B’ is an organ of facet ‘A’ then A should precede B. This principle is also helpful in determining the sequence of facets. For example in the title President of India, India stands for the state of India (P) in the subject History. President is also a (P) and he is the organ of the State.

### **Actant-Action-Actor-Tool Principle**

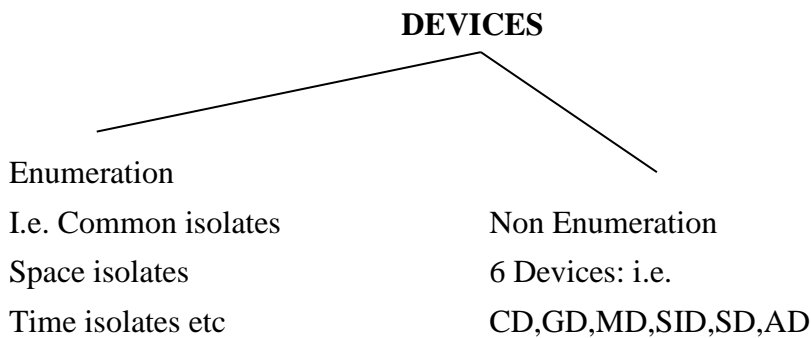
The principle states that ”if in a subject, facet B denotes action of Facet A by Facet C , with Facet D as the tool, then the four facets should be arranged in the sequences of A.B.C.D ”.

**Example:-** Charkha Cotton spinning by Girls. In this example, the Action is spinning”, the Actant is “Cotton”, the Actor is “Girls”, and the tool is “Charkha”. So, the form would be “Cotton spinning Girls Charkhe”.

Facet analysis is a method of Analysis and synthesis of documents. Using this method the ideas are collected and grouped on the basis of relevant characteristics and arranged in a preferred helpful sequence to serve a given purpose. In this lesson the steps involved in facet Analysis are detailed.

### 3.7 DEVICES

Colon classification has evolved various devices for the formation of the isolates. They are mainly of two groups



According to Dr.S.R.Ranganathan Devices means forming the isolates or sharpening the isolates or subdividing the isolates.

#### 1. Chronological devices (CD):

Wherever appropriate the isolates in a facet or in array may be formed on the basis of chronological characteristics is known as chronological devices.

The further division of a class by the digit expressing date or time is known as chronological device.

Uses of CD in CC:

- A. Special forms and functions in Math's: B6M3  
E.g. Geometry
- B. Author in literature: Shakespeare O111, 2J64
- C. Styles in Fine Arts: Mogul Architecture NA44, J
- D. Several of the Anteriorising common isolates (ACI)

E.g. Journal of library science (started in India in 1964) 2m 44, N64

#### 2. Geographical devices (CD)

Wherever appropriate the isolates in a facet or in an array may be formed on the basis of geographical characteristics is known as geographical devices.

- A. Community in history and law:  
Indian history V44  
Indian law Z44
- B. Dialects and jargons of a language  
Madurai dialect
- C. Styles in Fine Arts: Mogul Architecture NA44, J

### 3. Alphabetical device

This device provides for the use of the first or first two or first few initial letters(all in caps) for the name of the entity for subdividing a class on the basis of the name of the entity.

Examples: Othello by Shakespeare O111,2J64,O  
Ponni Rice J381P  
Hercules cycle D5125H

### 4. Mnemonic Device (MD)

Wherever appropriate the isolates in a facet or in an array may be formed by using one and the same digit or digit group to represent the same or similar concepts is known as Mnemonic device.

A Mnemonic device means an aid to memory or remembers. In a scheme of classification where the same or similar isolate have to be enumerated again and again under different subjects; it is always better if the isolates number could be used for a particular isolate idea. CC makes a very good and very frequent use of this device.

Examples

Diseases L:4

Plant disease I:4

Animal disease K:4

### 5. Super Imposition Device (SID)

SID means attaching to one number to another number within the same facet with a distinctive connecting symbol hyphen “ – “ chosen for this purpose.

This device is required to be used in the case of specific topic which is not found in a schedule but which can be represented by two isolates in the same facet, if these can be joined together by a connecting symbol hyphen.

Ex : Rural woman Y31-15

The specific subject Rural woman is not found scheduled in the group of (P) facet of the main class Sociology “Y”; but it can be represented by two isolates in the same facet namely Y15 standing for woman and Y31 standing for rural community, if they are joined together by the connecting symbol hyphen.

### 6. Subject Device (SD)

Wherever appropriate the isolates in a facet or in an array may be formed on the basis of subject characteristics is known as subject device.

Ex:

Medical libraries 24(L)

Textile machinery D6, 8 (M7)

Computer            D6,8(B)  
Teaching of Math's   T:3 (B)  
Textile industry      X8 (M7)

### **Summary**

In the lesson a brief explanation on the three planes of work is presented. The meaning of normative principles and the levels of normative principles are discussed. A complete list of canons, principles and postulated pertaining to the idea plane. Verbal plane and Notational plane is given. In the following lessons the normative principles are discussed in details. A characteristics is an attribute or quality on the basis of which different groups of entities can be created from its universe. In this lesson we have discussed the various conditions to be satisfied by a characteristic and for the succession of characteristics.

Arrays and chains form the basis of library classification. In this lesson the various conditions to be statistical by any array and chain are discussed. The sequence of classes in an array of classes should be helpful to maximum number of users. In this lesson we have discussed the various principles formulated by Dr. S. R. Ranganathan to determine the helpful sequence of classes in an array.

The work of verbal plane is an important one which identifies standard terms to denote the identified ideas by one idea plane. In this lesson we have discussed the need for a glossary of technical terms and the four canons which are useful for the verbal plane. Postulational approach provide a systematic classification. In this lesson we have restudied the two postulates of S. R. Ranganathan namely, the postulate of Basic subject and the postulate of Fundamental categories.

Facet analysis is a method of Analysis and synthesis of documents. Using this method the ideas are collected and grouped on the basis of relevant characteristics and arranged in a preferred helpful sequence to serve a given purpose. In this lesson the steps involved in facet Analysis are detailed.

## Self Assessment Questions II

1. The CC number for Christianity is \_\_\_\_\_
2. What is Whole-organ principle?
3. What is mnemonic device?

### Unit Questions

1. Examine the role of Normative principles in library classification.
2. Describe the Canons of Characteristics. Explain the canons for array and chain.
3. Explain the role of principles of helpful sequence in arranging facets.
4. Write an essay on facet analysis.
5. Explain the various devices.

### Further Reading

1. Ranganathan (S.R.) Prolegomena to Library Classification Ed. 3, 1967.
2. Ranganathan (S.R.) Elements of Library Classification, 1962.
3. Palmer (S.I.) and Wells (A.J.) Fundamentals of Library Classification.
4. Malby (A) Ed. Sayer's – Manual of Library Classification.
5. Krishankumar Theory of Library Classification, Ed.2, 1981.
6. Needham (C.D.) Organising Knowledge in Libraries, 1971.

### Answers to Self Assessment Questions

#### I.

1. Idea plane, verbal plane and notational plane
2. Characteristic is an attitude or any attribute complex
3. World – Asia – Europe – Africa – South America – North America

#### II.

1. Q6.
2. If a subject facet B is an organ of facet A then facet A should proceed B.
3. An aid to memory or remembers.

## UNIT - IV

### 4.0 OBJECTIVES

After studying this lesson, the students should be able to

- i) Know the meaning, qualities, types and functions of notations.
- ii) Understand the various Canons for notation
- iii) Identify the importance of mnemonics.

### 4.1. NOTATION : QUALITIES, TYPES, FUNCTIONS

According to Webster's third new International Dictionary this term "Notation" derived from the Latin term "Notation" which means the explanation of the term in accordance with its symbology (or) the primary sense of the word.

Notation means representing of numbers, quantities, etc., by symbols; set of such symbols.

Classification pervades all the various activities of our life those who are orderly in life make a greater use of classification. Most of us are unaware of the fact that we classify to a large extent in our daily lives. Without classification human progress would be impossible.

#### Definitions:

- E.C.Richardson defines notation as, "a short sign".
- According to Bliss, "A notation is a symbol or mark or symbol in some order, denoting terms or members of a series or system of things". This is general definition to notation.
- According to Dr.S.R.Ranganathan. He says that notation is "A number forming a member of notational system".

#### Importance of notation:

Notation is used in every day life for the sake of convenience. It is used in different subjects for a variety of purposes. In an ordinary composition, punctuation marks such as ( . , : ; ) indicate the longer short pauses.

In mathematics, figures, symbols, they are indicating terms, quantity and measures. Similarly in chemistry symbols are used for a variety of purposes. They may be employed to indicate different chemicals, chemical reactions and so on.

In library classification notation is essential for the classification of documents. Here notation serves as a symbol for terms. Classificationists and classifiers have paid too much attention to notation.

#### Need:

According to Dr.S.R.Ranganathan, "a number forming a member of a notational system". We are interested in the universe of subjects and we want to

arrange in a helpful filiatory sequence on the basis of scheme of successive characteristics. There is also need machinize the arrangement.

However alphabetical sequence is unhelpful for this purpose, namely

- The names of subject are unstable
- It leads to an unhelpful sequence, resulting in the alphabetical scattering of documents on related subjects.
- The names of subjects are not unique due to synonyms and antonyms.

### **Purpose of notational classification:**

The purpose of a notation in classification are many. Bervick sayers has given the most important purpose of it in the following:

- To give a schedule of classification a symbol for each of its terms which shall be constant. So that whenever a term is to be represented, it shall be marked by; one class mark only.
- The class mark thus fixes the place of the term in hierarcy of the schedule.
- To be a short sign to be written on the back of the book as well as in catalogue entries, so that the books on a subject are held together by their subject number.
- To show the sequence and sub-ordination of subjects. A successful notation is one where by at glance the order of the scheme can be seen and from an individual number the importance of a subject in relation to its main class can be inferred.
- To achieve the qualifying of subjects by combination of symbols.
- a) To show related subjects
- b) To analyse books of several subjects
- c) To record aspects etc.

### **Functions of Notation:**

J.Mills states the function of notation as follows:

- The vital function is to mechanically maintain the sequence of the objects, by giving each term a symbol possessing an agreed ordinal value. Notation is primarily an ordering device.
- It makes the alphabetical subject index possible. Reference from a term in the index would not in itself convey of a user the exact location of a subject. But a class number cited number cited alongside the term. (Eg Economics 330), locate automatical.
- By the use of synthesis, notation greatly increases the range of specification possible.
- It assists the guiding of a library.



- It may provide mnemonic qualities which assist the librarian to remember the sequence of division within a library to remember the sequence of divisions within a class.

### **Types of Notation:**

#### **Pure Notation:**

A notation system in which no class number contains more than one species of digit is called a pure notational system.

Example : 341, MPA acf.

#### **Mixed Notation:**

A Notational system in which a class number may have two or more species of digits is called a mixed notational system.

Example: V 44 : 257, P , III a.

#### **Faceted Notation:**

Multipartite notation (Linear, horizontal, right hand notation, with digits separating into blocks of three to six digits by space or by a semantically poor digits, usually a dot) with the blocks of digits connected by meaningful indicator digits, analogous to punctuation marks, with each indicator digit indicating inter relation between two components ideas of a subject is called faceted notation.(Prolegomena P.236)

#### **Non-Faceted Notation:**

Non-Faceted notation is an alternative name unipartite notation. A unipartite notation consists of linear, horizontal, right handed notation with all the digits written closely, so as to form one block.( Prolegomena P.236)

#### **Hierarchical Notation:**

A hierarchical notation indicates the hierarchy of the scheme of classification. By means of its length and structure it is able to indicate the subjects which are co-ordinate ones. It also shows to which topic a particular sub-topic is sub-ordinated. DDC, UDC, and CC these are the good examples of hierarchical notation.

#### **Non-Structural Notation:**

Here is an example from BC 2:

J	-	Education
JH	-	Teachers and Teaching
JI	-	Teaching methods and Aids
JJ	-	Methods.

In the above example, the notation does not indicate hierarchical pattern. It is only the intentions, which show the hierarchical relations between the subjects.

Example : E.J. Coat's British catalogue of music classification is good example.

### **Quality of Notation:**

Dr.S.R.Ranganathan suggested that notation should have the following qualities namely

- a) Uniqueness
- b) Brevity
- c) Expressiveness

#### **(a) Uniqueness :**

It means that a class number should represent one and only one meaning. This is essential because occurrence of synonyms and homonyms is harmful to a classificatory language. It is desirable that a class number should be as brief as possible.

#### **(b) Brevity:**

Brevity and simplicity (easy to read, pronounce, write and type) are important qualities. It is generally agreed that notation should be as short as feasible. Brevity is necessary for classification of books, but not for the work of documentation.

#### **(c) Expressiveness:**

By expressiveness, he meant that a class number should represent relevant and essential characteristics of the subject being classified.

Bliss states that "Notation" does not make classification through it may mar it. It means that classification of knowledge is a main thing where as notation is only serving as a system of symbol denoting the classes in their order without naming and defining them.

However, a good notation does not make a bad classification, good notation depending upon the some essential qualities, namely:

#### ➤ **Speed of writing:**

Speed of writing is important. Since the class number of each book must be entered in several places in the book namely on the spine, the data table, back of the title page in side of the book and the book card.

#### ➤ **Pronunciability:**

One quality of the notation is that it is easily pronounced. But this is not essential as a class number is not going to be read out more often than being written down seen and temporarily in memory.

#### ➤ **Easy to remember:**

If the notation is brief and simple, it is then easy to remember.

➤ **Flexibility:**

This means a notation adopted in a scheme of classification should be flexible to allow any new subject into any place without dislocating sequence of the already existing classes.

➤ **Mnemonics:**

By mnemonic notation means that whenever a subject or form appears. It has always the same notation throughout the classification. In DDC standard sub-division secures this. In CC Comm. Isolation space schedule S.D. etc.. secure this.

Notation has an important role in the human society in two ways. From one point of views it helps to easy memory for all incidents. From one point of view it helps to carry out uniform technical work in the library and information science field. Possibility of current development in library information field, in the absence of notation.

#### **4.2. CANONS OF NOTATIONAL PLANE**

Alphabetical arrangement (of document) is unhelpful as a means of mechanizing the arrangement of subjects in a preferred helpful sequence. In library classification ordinal numbers are used for mechanizing the arrangement of subjects. Later other symbols were adopted to donate the subjects in library classification. Such symbols or digits are known as notations.

##### **Definition**

According to Dr.S.R.Ranganathan, “Notation is a system of ordinal numbers used to represent the classes in a scheme of classification”.

##### **Canons on Notation**

Notational plan deals with the domain of symbols. In library classification notation serves as symbol for terms. The Roman capital letters (A-Z). Roman lower letters (a-z), punctuation marks etc. In a word, notation is a conventional symbol expressing a single meaning.

The following are the Canons for Notational plane.

##### **1. Canon of synonym**

This canon states, “The class number of the subject in a system of class numbers and isolates number of an isolate idea in a system of isolate numbers should be unique”.

Colon classification has provided a unique number for each subject. However, in some cases like, ‘space schedule’ the canon is violated due to the fact that the numbers two and three are prescribed for the mother country and for favoured country respectively of a library.

### Example

In Indian Library, in space schedule, 'for Indian the numbers 2 or 44 may be used'. This creates synonyms.

### 2. Canon of homonym

This canon states, "The subjects represented by a class number in a system of class number and isolate idea represented by an isolate number in a system of isolate numbers should be unique".

This means that each class number should represent one subject only. Homonym in notation takes place due to restricting the length of class number. This can be avoided, if a scheme for classification based on faceted scheme.

### Example

Religion	CC
Christianity	Q

### 3. Canon of Relativity

The canon of relative states, "The number of digits in a class number or in an isolate number should be the same as the order of the subject or isolate idea as the case may be represented by it".

This canon has been adopted in CC and DDC. It means that the length of the class number should be relatively equal, to the depth of the subject.

### Example

Literature	CC
English	O
Drama	0111
Shakespeare	0111,2j64
Antony & Cleopetra	0111.2j645

### 4. Canon uniformity

According to this canon, "The number of digits in a class number or in an isolate number should be constant. Whatever be the order of the subject of the isolate, represented by it".

This canon holds good in the case of automatic classification, where the number of digits of a notation may be uniform micro and macro subjects.

### Example

	DDC
Ultra-Violet	535.844
Raman Effect	535.84

In the above example both the subjects Ultra-Violet and Raman effect the number of digits is 7 in the case of DDC.

## **5. Canon of hierarchy**

According to this canon, "In a class number or in an isolate number, there should be a digit to represent each of the characteristic used in constructing the class number of the isolate number, as the case may be".

Though CC follows this canon, in some cases due to telescoping in array, it is violated. A telescoped array is an array of classes in a schedule of classification, made of coordinate and subordinate isolate, as viewed from the idea of plane, but those class numbers appeared to be coordinate as viewed from the notational plane.

### **Example**

In the space schedule 'World' the number 1 is assigned and then from 2 to 9 numbers can not be used for want of coordinate classes. In order to utilize the following numbers the subdivision resulted. From "World" are assigned these numbers eg. 4 Asia, 5 Europe, 6 Africa etc., As a result "Asia" attains the status of world. Though telescoping in array violates the canon of hierarchy, utilizing the follow digits for sub – divisions of world saves one digit thereby satisfying the law of parsimony.

## **6. Canon of Non – Hierarchy**

The canon states "In a class number or in an isolate number, there need not be a digit to represent each of the characteristics used in consulting the class number or isolate number as the case may be".

## **7. Canon of Pure notation**

The canon states "The base of the national system of a scheme for classification should one and only one species of digits".

DDC has adopted pure notation, i.e., Indo-Arabic numerals 0-9 and therefore has a short base.

## **8. Canon of Mixed notation**

The canon states "The base of the national system of a scheme for classification should two and more species of digits eg., Ba 'N7. Bibliography of Mathematics brought upto 1970".

## **9. Canon of Faceted notation**

The canon states "A faceted notational system should be used when the length of the base of the notation is about ten and the universe is likely to contain more than a million or more entities or subject and the length of the base is about fifty six and the universe is likely to contain thousand million or more entities or subject".

## **10. Canon of Non - faceted notation**

A non notational system may be adequate when the length of the base of the notation is about ten and the universe is likely to contain not more than a million entities and the length of the base is about fifty six and the universe is likely to contain not more than one thousand million entities".

### 11. Canon of con - extensiveness and canon of under extensiveness

Canon of co – extensiveness states, “ In a class number digit should be added successively so as to represent the measure incidence of even the very last characteristic in the succession of characteristics, admitted by the universe classified to and relevant to the purpose of the classification”.

Canon of under extensiveness states, “In a class number it is not essential that the digits should continued so as to represent the measure of incidence of the later characteristics in the succession of characteristics, admitted by the universe classified and relevant to the purpose of the classification”.

#### Example

CC		
L	-	Medicine
L45	-	Lung
L45:4	-	Disease of Lung
L4547257:6	-	Treatment of lung cancer.

### 12. Canon of Extrapolation in Array

Extrapolation means polating at the beginning and at the end of the national system.

According to this canon, “An array of class numbers or isolate numbers should admit of and number of new co – ordinate numbers being added at the beginning and at the end of the array”.

To satisfy this canon both DDC & CC have adopted gap device.

### 13. Canon of Interpolation in Array

According to this canon, “An array of class numbers or isolate numbers should admit of interpolation of any number of new co – ordinate numbers and at the end of the array”.

This canon is classified by the adaptation of gap service, mixed notation, introduction of new species of digits and emptying digits. CC had adopted the notation T, V and Z as emptying digits. Both CC and DDC have adopted gap device.

### 14. Canon of extrapolation in chain

“A chain of class number or isolate numbers should be of the extrapolation of any number of successive links of its ends. In other words, the national system should admit of the chain, ending with any number being lengthened to any extend found necessary”.

Gap device and decimal fraction devices have been used for extrapolation in chain both in CC and DDC.

## 15. Canon of interpolation in chain

“A chain of class number or isolate numbers should admit of the interpolation of any number of links between any successive links in chains”.

This canon is not applicable at these points in the chain where the step from one link to the next one in the chain does not satisfy the canon of modulation.

The above general canons are indispensable in designing a scheme for classification. If any canon conflicts with the other canons, then the conflict may be resolved by interpretation and the requirement of the situation in which the scheme is to be designed.

### Self Assessment Questions I

1. E.C. Richardson defines notation as \_\_\_\_\_
2. Notation means \_\_\_\_\_
3. List out any two purposes of notations.

### 4.3. Mnemonics in Library Classification

The term ‘Mnemonics’ originates from a Greek word meaning “To remember”. Its dictionary meaning is ‘The art of assisting memory; as mode of recalling to mind any fact of number or a sense of disconnected terms or figures’.

In library classification, it refers to the representation of the same concept by the same digit (s) wherever the concept occurs in the scheme. In other words, notation, having mnemonics feature is one in which an isolate number represents the same idea to whatever host class it is attached.

Regarding the mnemonic use of notation in modern classification, Sayers observes thus; There is a very general quality in modern classification notation which is ingenious and within limits of great value to a classifier. This is its mnemonic the work of reference to tables and indexes to the minimum.

According to H.E. Bliss, ‘Notation, as a kind of symbolic language depends extensively on memory of meanbolic language depends extensively on memory of meaning. In learning to read and write a new language we gradually learn the words and their meanings and remember more of them. In like manner librarians and users of libraries gradually learn the order of the classes and remember the class marks, though they continue to make use of the catalogue, shelf lists and index to schedules. The more systematic the system is the more readily they will learn and the more efficiently they will remember. This is the natural and rational ground for a system of mnemonics or symbols that may be readily and systematically remembered’.

### **Utility of Mnemonic Notation :**

The universe of knowledge is ever-growing and the growth is continuum, dynamic, turbulent and multidimensional, These are the characteristics of the universe of the knowledge that produce a great pressure on the notational system of a scheme for classification and as such the notational system should be a growing one. Such a growing on memory in correlating each digit to the idea represented by it and for that mnemonic features are indispensable in the notational system.

The following are the Utility of Mnemonic Notation:

- (1) It assists the memory of the classifier while assigning class numbers for documents and so he need not frequently consult the scheme for constructing class number and thus.
- (2) It gives much autonomy to the classifier in constructing class number:
- (3) It reduces, to a great extent, the work of reference to classification schedules and indexes;
- (4) It helps in reducing the size of the classification schedules.
- (5) It enables to achieve consistent sequence in similar arrays and in a word:
- (6) It acts as a device to satisfy the canons of consistent sequence; helpful sequence, thereby satisfying the Law of Parsimony and hospitality in array and chain.

### **Different kinds of Mnemonics:**

Ranganathan has identified the following kinds or mnemonics and enunciated canons for them.

1. General mnemonics.
2. Alphabetical mnemonics or verbal mnemonics.
3. Scheduled mnemonics.
4. Systematic mnemonics.
5. Seminal mnemonics.

#### **1. General Mnemonic**

The General canon of mnemonics is enunciated thus; The digit or digits used to represent a specified concept in a class number should be the same in all class numbers having that concept represented in them provided that insistence on such consistent representation does not violate more important requirements (Prolegomena, Ed.3. p. 293)

This is just a definition of classification mnemonics. If the same concept is represented by the same digit (s) in a class number, it becomes an aid to memory and makes possible the use of a classification scheme with great ease.



Very often it is possible for classifiers to provide a number for a class without referring to the schedules.

In the field of library classification, we represent each entity by an ordinal number. In fact an entity is first replaced by a complex of its essential differentiating attributed or characteristics essential to the subject context under consideration, stated in a helpful sequence. Then each characteristic is represented by a digit or set of digit deemed to have been frozen into a single one. These digits are written in succession. In the schedules, the digit is in array-isolate number. The idea represented by it is an array-isolate idea. The term equivalent to it is an array-isolate term in the given subject plane and thus provides a systematic approach to the designing of a classification scheme.

### **Alphabetical Mnemonics or verbal mnemonics:**

Verbal mnemonics results form the sub-divisions of a Class by the Alphabetical Device which is recommended and in CC at some places. In alphabetical division, the name of a class is represented by its first few letters and this automatically secures mnemonics quality for the notation. However, the type of mnemonics that alphabetical device secures it in a sense very weak, for it is recommended mostly in the proper noun which is not often a recurring concept.

For example, in CC the class is number for Shakespeare's drama-Macbeth is O111, 2j64, MaC.

The concept 'Macbeth' does not occur in any other context except that in literature and in the special context of Shakespeare. So it cannot be regarded as a recurring concept.

In the alphabetical sub-divisions of a class, one point is to be remembered that the terms concerned should be those in international usage, as otherwise, the symrepresenting them could be different.

### **Canon of Alphabetical mnemonics:**

Considering the weakness of Alphabetical mnemonics. Ranganathan propounded the canon for Alphabetical mnemonics thus :

'Alphabetical Mnemonics should be rejected without any hesitation, if a sequence more helpful to readers or more filiatory than alphabetical sequence exists Alphabetical mnemonics should be preferred if the alphabetical sequence is as helpful as any other sequence and if an international nomenclature exists in the field to which it is applied.

In CC, for example, arrangement of different 'Brands' of bicycle or of motor cars, of different variant forms of an instrument, having distinct names-and of the different grains of an agricultural crop or cultivators, trade names etc., are instances.

### **Scheduled Mnemonics:**

This kind of mnemonics is especially prescribed for the classificationists who think of designing a schedule or scheme for classification.

The canon of scheduled mnemonics is enunciated thus: 'A scheme for classification should use one and the same digit or digit-group, as the case may be, to represent an isolate idea or an array isolate idea, in whatever subject it may occur (Prolegomena, Ed. 3, P. 298).

Obviously, this canon will automatically secure conformity to the consistent sequence and satisfies Law of Parsimony-in regard to the length of the schedules classification. The use of the devices and common schedules automatically meet the requirement of the canon of scheduled mnemonics. A faceted classification with regard to the isolates in a facet also satisfies the canon. Let us examine the application of this cannon in CC and DDC.

### **Scheduled Mnemonics:**

1. Mnemonics features in the enumerated class number.

(a) Let us examine the following class numbers in DDC.

420 English Language

820 English Literature

914 2 Geography of England

942 History of England

052 English serial publications

032 English language encyclopedias

in all the above class numbers, the concept 'English/ England' is represented by the digit-2. Hence 2 is mnemonic digit for the concept 'English or England'.

(b) But it is to be remembered that the digit '2' has not been exclusively reserved for the concept 'English/ England'. It has also been to represent several other concepts like the one given below :

812 American Drama

822 English Drama

842 French Drama and so on

In the above, the last mnemonic digit 2 stand for the recurring concept 'Drama'.

On the analogy of the above item (a) the digit a is a mnemonic digit for the concept 'German or Germany' and in item (b) the last digit 3 stand for fiction.

(Note : In item (a) if you use the digit 4, it stands for French or France and in item (b) it stands for 'essay' and so on).

## 2. Mnemonic feature in various devices :

The use of device and common schedules meet the requirement of the canon of scheduled mnemonics. Let us examine this in the following Devices in accordance with CC and DDC :

- (a) Facet Device;
- (b) Common isolate Device;
- (c) Chronological Device;
- (d) Geographical Device;
- (e) Subject Device;
- (f) Phase relation Device – Inter-Subject, Intra-Facet and Intra-Array;
- (g) Super imposition Device and so on.

### Summary

Notation has an important role in the human society in two ways. From one point of views it helps to easy memory for all incidents. From one point of view it helps to carry out uniform technical work in the library and information science field. Possibility of current development in library information field, in the absence of notation.

The above general canons are indispensable in designing a scheme for classification. If any canon conflicts with the other canons, then the conflict may be resolved by interpretation and the requirement of the situation in which the scheme is to be designed.

### Self Assessment Questions I

1. CC number for India in space schedule is\_\_\_\_\_
2. Example for Canon of Uniformity is \_\_\_\_\_
3. What is canon of facet and notation?

### Unit Questions

1. Define Notation. Describe the qualities, types and functions of good notations.
2. Explain the various canons for notational plane.
3. Discuss in detail the application of mnemonics in library classification.

### **Further Reading**

1. Ranganathan (S.R.) Prolegomena to Library Classification Ed. 3, 1967.
2. Ranganathan (S.R.) Elements of Library Classification, 1962.
3. Palmer (S.I.) and Wells (A.J.) Fundamentals of Library Classification.
4. Malby (A) Ed. Sayer's – Manual of Library Classification.
5. Krishankumar Theory of Library Classification, Ed.2, 1981.
6. Needham (C.D.) Organising Knowledge in Libraries, 1971.

### **Answers to Self Assessment Questions**

#### **I.**

1. A short sign
2. Representing numbers, quantities etc. by symbols
3. To give a schedule of classification with constant terms  
To fix the place of the term in hierarchy of the schedule.

#### **II.**

1. 2 (or) 44
2. Ultraviolet 535.844
3. It is the canon which is used when the length of the base of the notation is ten.

## UNIT - V

### 5.0 OBJECTIVES

After studying this lesson, the students should be able

- i) To identify the application of zone analysis
- ii) To describe the use of systems and specials in colon classification.
- iii) To understand phase analysis, common isolates and standard sub-divisions.

### 5.1 ZONE ANALYSIS.

The most important concept of 'Zone Analysis' is due to the considerable progress in the notational plane in colon classification. It uses the mixed notation consisting of the following species of digits.

1. Roman small letters a.....z (omitting i,o and I)
2. Indo-Arabic numerals 0.....9
3. Roman capital letters A.....Z and
4. Connecting symbols , ; . '<>' - ( ) etc.  
and some Greek alphabets (ξ,Δ)

Among these indo-Arabic numerals and frequently used in the notational plane to accommodate the enumerated isolate ideas in an array. While investigating the ways and means of arranging these species of digits so as to satisfy the canon of Helpful Sequence, Ranganathan developed the concept of Zonal analysis.

#### **Definition:**

ZONE ANALYSIS is the analytical study of the organization of the isolate ideas in an array for designing the symbolic notation.

This study consists of the following four stages.

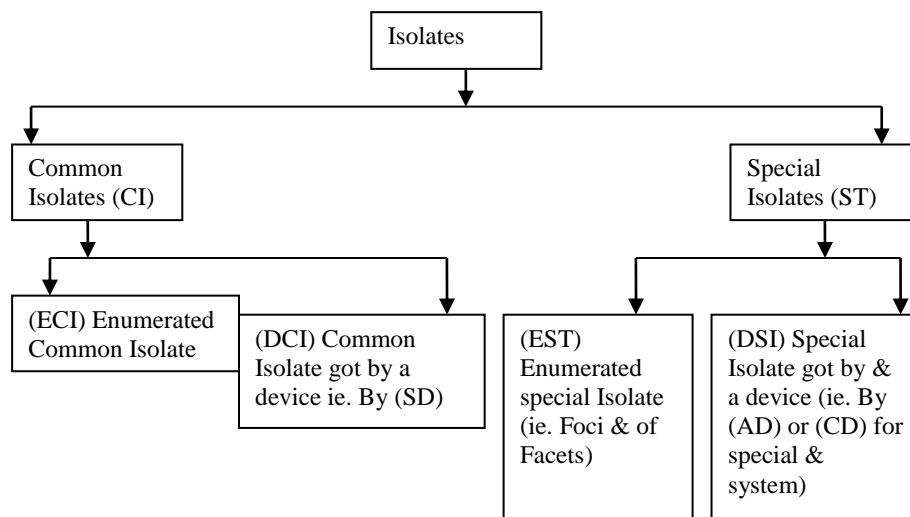
- Analytical study of the organization of isolate ideas in an array in the ideal plane.
- Analytical study of the organization of isolate numbers in an array in the notational plane.
- Matching the results of the two analytical studies to determine their sequence in an array.
- Associating each group of associate ideas with the most appropriate group of the isolate numbers that the most helpful sequence of the isolates in an array can be secured.

The notation thus assigned to the isolate ideas in an array helps us to maintain mechanically the preferred helpful sequence. Therefore in designing a

scheme for library classification zone analysis is the most precise and scientific method for designing notation to isolate ideas in an array.

**The organization of isolate ideas in idea plane :**

It can be illustrated as given below



Enumerated Special Isolate (ESI) are based on characteristics special to the immediate universe classified. That is to say that all the foci in a facet are enumerated special isolate (DSI) are based on general characteristics such as the Alphabetical make-up of the name of the isolates for Specials and Systems are thus special isolates in an array.

It may be remarked that general characteristic isolate do not need enumeration, but that special isolates need independent enumeration practically for every Host Class. Thus the isolate ideas in an array falls into four kinds namely (ECI), (ESI), (DCI) and (DSI). Each kind gives rise to a zone of its own in the array.

**Sequence of the Four Zone:**

To satisfy the canon of helpful sequence, we have to arrange these four zones (ECI), (ESI), (DCI) and (DSI) in an array.

**One Method** of arranging these four zones is that the enumerated set (ECI) and (ESI) may be brought first or devices set (DCI) and (DSI) may brought first.

**Second Method** is to decide whether (ECI) or (ESI) is brought first among the enumerated set and

**Third Method** is to decide whether (DCI) or (DSI) is brought first among the device.

If we relate the enumerated isolate numbers to the idea plane we can understand that enumerated common isolate (ECI) are assigned for approach material, and therefore should come before (EST).

Moreover, (ECI) should come at the very beginning. Regarding the third method, we have to decide whether (DCI) or (DSI) should come among themselves. In this case, the (DSI) got by alphabetical device (AD) or Chronological device (CD) is used more often than the (DCI) got by (SD) which is used only as a temporary measure. Therefore (DCI) comes last among the four zones. Hence the helpful sequence is (ECT), (ESI), (DSI), (DCI)

**Zone in an array of Main Class:**

The general layout of the main classes of the CC is that the classes are grouped into four zones with distinctive notation for each group. The groups and kinds of notation are given below.

S. No	Zone Order	Kinds of Notation	Digits	Main Class
1.	Zone-1	Roman lower case	z	Generalia
2.	Zone-2	Indo-Arabic numeric	1.....4	Recently recognized classes
3.	Zone-3	Roman Capitals	A.....Z	Traditional classes
4.	Zone-4	Circular brackets	(:g)...(r) or (p)...(x)	Methodologies or Techniques.

**Zone-1: Main Class: Generalia:**

In the colon Classification the main class ‘Generalia’ is assigned with the notation ‘z’. All the publications dealing with the several subjects but not going into any single subjects are accommodated in this class.

**a. Building the second order Array with Zone-1:**

We can build the second order array of the Main Class Generalia, with zone-1. This means, building the second order array with approach materials.

Ex: zk General Encyclopaedia.  
zm General periodicals.

**b. Building the second order Array with Zone-2:**

Here we can build the second order array of the Main Class Generalia, with zone-2 that is with Indo-Arabic Numerals.

Ex: z5 Occidentalia

z51 Greekology

z7 Americanology.

**c. Building the second order Array with Zone-3:**

Let us illustrate the built of second order array of Main Class Generalia with zone-3 which concerns with 2 Roman capital letters.

The third zone represents materials centering any person who has been encyclopedia in his range of influence and contribution to recorded thought and attracts contributions on himself from the angle of most of the Main Classes. The part of the isolate number begins in the second order array of this zone is to be got by (AD).

Ex: Gandhiana zG

Leninism zL

**d. Building the second order Array with Zone-4:**

The fourth zone of the second order array of the main class 'Generalia' represents materials centering rural particulars subjects. These subjects are Jainology; Catholicology; Islamology etc.

These subjects are not merely on the religions concerned nor are they on the sociology of the community following the religion concerned. The class numbers are

Z(Q3) Jainology

Z(Q62) Catholicology

**Recently Recognised Subjects:- Zone-2**

Zone-2 recognised the subjects except the subject library science and will include in the 7<sup>th</sup> Edison.

In the 6<sup>th</sup> Edison the following subjects are added

1. Universe of knowledge.
2. Library of science.
3. Book science.
4. Journalism.

In the 7<sup>th</sup> Edison the following subjects are added

5. Exhibition Techniques.
6. Museology.
7. Systemology.
8. Management science.



### Zone-3: Traditional Main Classes:

This zone is devoted for the traditional Main Classes. These classes are not got by alphabetical device or chronology device. But the method used in filling up the third zone is to arrange the Main Classes in a more or less helpful sequence and assign the digits of Roman capital letters in succession with certain adjustment.

- Ex: B-Mathematics  
C-physics  
G-Biology  
GUA-Molecular Biology  
GUB-Bio Mechanics  
GUC-Bio Physics

### Zone-4: Newly Emerging Methodology and Techniques:

The zone is allotted to the newly emerging methodologies and techniques. These distinct disciplines are evolved from common isolates or traditional Main Classes. These are enclosed in circular brackets.

- |           |                           |  |                       |
|-----------|---------------------------|--|-----------------------|
| Ex.: (:g) | Evaluation techniques     |  | Common isolate        |
| (p)       | Conference techniques     |  |                       |
| (r)       | Administration techniques |  |                       |
| (p)       | Communications Theory     |  | Roman capital letters |
| (x)       | Management                |  |                       |

Zone analysis is helpful in the design of schedules in a scheme for library classification employing mixed notation. In addition it enables to increase the capacity of the notation to accommodate any number of new classes in an array.

## 5.2. Systems and specials :

### System in Colon Classification :

The idea of 'System' had been recognized by Ranganathan 'School of Thought' in the first edition of colon classification. According to him, in the universe of subject may be exposed on the basis of theories, principles tests etc. If the fundamental laws, theories, principles etc for a single subject are propounded differently by different eminent personalities from time to time and explained in different ways, then each personalities is said to have created his school of thought. For example we have Indian systems of Medicine such as Homoeopathy, Unani, Ayurvedic, Siddha etc. Likewise there are various schools of thought in Psychology, Education, philosophy etc. It is therefore, observed that the number of approaches in the explanation of a subject decide the number of system and each approach the whole range of subject is treated.

### Examples

Treatment of lung disease according to Siddha gets the class number LC, 45:4:6.

Treatment of disease according to Siddha LC : 4.6.

Treatment of disease according to Siddha, Unani Homoeopathy LA:4:6.

### **Specials in Colon Classification :**

Like 'System' another development of knowledge is 'special' in Colon Classification in a special there is restriction in the universe of the basic class. Specials, arise out of such a restriction unlike systems which arise from difference in hypothesis postulates etc. For example in medicine there are specialized medicine for different age group like child medicine, female medicine, old age medicine etc. The field of study of each of these is confined to those problems that are peculiar to the restricted age group concerned. Each special views the subjects from its own angle and covers the entire area as a specialist's concern.

Similarly industrial medicine denotes the study of the medical problems peculiarly incident to industrial workers. Likewise aviation medicine stands for the study of medical problems peculiar to flying usually at speeds for in excess of the one normally experienced in motion on surface and at high altitude. Specials in physics mean the study of physical phenomena such as properties of matter, coefficient of thermal expansion, electrical conductivity and every other problem when some of the factors are abnormal such as high pressure, high voltage etc.

In agriculture, soiless cultivation, dry cultivation, arctic cultivation, etc. are specials with abnormal restrictions in soil water supply, temperature etc. respectively.

### Examples :

1. LC, 6F 4 : Gynaecology according to Siddha Medicine
2. E9G, 92:3 : Biochemical analysis of alkaloids
3. XB, 9N : Public enterprise according to war economics
4. CN1, 1:21 : Velocity of light according to quantum theory
5. L9 F:4: Gynaecology.

### **Self Assessment Questions I**

1. What is zone analysis ?
2. ECI stands for \_\_\_\_\_
3. The CC number for mathematics \_\_\_\_\_

### 5.3. PHASE ANALYSIS

One of the notable features of the every expanding universe of knowledge, seen particularly in the past fifty years, in the emergence of interdisciplinary subjects. These newly emerging subjects naturally call for never techniques for classifying documents of such nature and organizing them in a helpful sequence for storage and retrieval. Ranganathan identified the formation of these new subjects in which two subjects are inter related.

The Theoretical principles and techniques associated with classifying complex subjects is known as phase analysis. Among the existing classification schemes, colon classification has given full treatment to this area of classification.

In the sixth edition of colon classification (1960) three levels of relations, called phase relations, intra-facet relation and intra-array relation were recognised. Within each level, five kinds of relations were isolated. These relations are given below:

Nature of Relation	Inter-subject Phase relation	Intra-facet Phase relation	Intra-array Phase relation
General	a	j	t
Bias	b	k	u
Comparison	c	m	v
Difference	d	n	w
Influencing	g	r	y

In 1967, it was decided to isolate, tool phase relation and it was allocated 'Oe' (zeroe) as indicator digits. This relation taken place when one subject is applied for the purpose of studying or develop of another subject.

#### **General Phase Relation:**

General Phase relation denotes a more or less complete relation between the primary and secondary phases, inclusive of any type of relations viz., inter-subject, interfacet or inter-array.

The sequence of the phase is determined on the basis of the sequence of classes given in the classification schedules.

#### **Bias Phase:**

The Bias relation between the two subjects indicates that the exposition of one subject (Phase1) is biased towards another subject specialized (Phase 2). This means that the exposition of a subject is specially attend by the selection, arrangement, choice of illustrations etc., of the topics as per the needs of a

specialist. Here, Phase 1 is known as Biased Phase and Phase 2 as Biasing Phase.

The obvious sequence of these two phases is the subject of exposition (Phase 1) followed by the specialized to whom the work has been written (Phase 2).

It is possible that books on statistics are written for the use of engineers, biologists, librarians etc., As it is necessary to distinguish these books for general books on statistics, at the device has been contributed. Books on statistics written for particular groups are arranged according to a logical sequence as follows:

Statistics for Librarians

Statistics for Engineers

Statistics for Biologists etc.,

### **Comparison Phase Relations:**

In this phase, comparison is made between two subjects. Two subjects whose class number is earlier class number is treated as the first phase.

The class number for “Botany compared with zoology” would be I c c k. Hence, botany has been made the first phase because the class number for Botany has been less ordinal value than that for Zoology.

### **Difference Phase Relation:**

In this phase, the difference is expounded between two subjects. The subject whose class number is the earlier class number is treated as the first phase.

The class number for “Difference between botany and agriculture” would be IOdJ Botany has been treated as the first phase because the class number for botany has less, ordinal value that of agriculture.

### **Influencing Phase Relations:**

In this phase relation, the influence of one subject on another is expounded. The subject being influenced is considered as the first phase. The second phase is called the influencing phase.

The class number for “influence of geography on political science” would be wog U. Here, political science is the subject being influenced; therefore, it has been treated as the first phase, and geography is regarded as the second phase.

### **Types of Phase Relations:**

As it has already been mentioned, there are three types of phase relations, indicating relation between.

1. Two or more subjects, known as inter-subject phase relations.
2. Two isolates within one and the same schedule of facet isolates, known as inter-facet phase relation; and

3. Two isolates, within one and the same array of isolates known as intra-array phase relation. Let us examine them on by one in that order.

### 1. Inter Subject Phase Relation:

The relation of the two subjects thus coming together is called inter-subject phase relation. As already discussed five different relations can be between the subject. They are:

1. General Phase Relation
2. Bias Phase Relation
3. Comparison Phase Relation
4. Difference Phase Relation
5. Influence Phase Relation

The class number of a two phased subject is got by inserting between the class number of the first and the second phases, the connecting symbol zero (0) and a digit to represent the phase relation. The schedule of the digits assigned to phase relations. The schedule of the digits assigned to different relation in colon classification.

#### Examples:

1. General Phase Relation W0aX = Relation between political Science and Economics
2. Bias Phase Relation S0b L = Psychology for Doctor
3. Comparison Phase Relation C0c E = Physics compared to chemistry.
4. Difference Phase Relation B 85 / CN 2 = Difference between wave function and wave mechanic
5. Influence Phase Relation W0g U = Geopolitics = Political Science as influenced by geography.

### 2. Intra-Facet Phase Relation:

The relation may operate between foci from one facet, e.g.,

Influence of classification on book selection, in which both elements come from the problem facet of "Library Science". Ranganathan names it as an Intra facet phase relation. In other words, a subject is said to involve an intra-facet phase relation when it brings into relation two isolates of one and the same facet of a class. The interrelation between the isolates of a facet in a main class is known as intra-facet phase relation. Intra facet relation is of five types. They are:

1. General Intra-facet phase relation
2. Bias Intra-facet phase relation
3. Comparison Intra-facet phase relation
4. Difference Intra-facet phase relation

### 5. Influence Intra-facet phase relation

The class number of an intra-faceted specific subject is got by inserting between the two isolate numbers of the constituent divisions, the connecting symbol zero (0) and an appropriate digit representing intra-facet phase relation. The schedule of the digits assigned to the different intra-facet phase relation in colon classification reads thus:

General Intra-facet Phase Relation					=	j
Bias	“	“	“	“	=	k
Comparison	“	“	“	“	=	m
Difference	“	“	“	“	=	n
Influence	“	“	“	“	=	r

#### Examples:

1. General Intra-facet phase relation X : 5.44. 0j 56 = Commercial relation between India and Great Britain
2. Bias Intra-facet phase relation X: 5.44Ok 1N 48 =Commonwealth preference in India's commerce L: 20k3 = Physiological anatomy
3. Comparison Intra-facet phase relation B910 on 43:68 = Comparison of the constitution of Earth and Mars
4. Difference Intra-facet phase relation E: 3 on 5 = Difference between analytical chemistry and extractive chemistry
5. Influence Intra-facet phase relation Q6Or4 = Influence on Buddhism and Christianity

#### Intra-array Phase Relational:

Ranganathan feels it is possible to have books expounding the relation of two array. Isolates in one and the same array. When two sub-isolates of an isolate are interrelated with each other, this is known as Intra-isolate Phase Relation would be a better term for this type of relation, since Intra-array Phase relation explosive the relation of sub-isolates which occur under one and the same isolate. Intra array phase relation is of five types. They are:

General	Intra	Array	Phase	Relation
Bias	“	“	“	“
Comparison	“	“	“	“
Difference	“	“	“	“
Influence	“	“	“	“

The class number of an Intra-array specifies subject is got by inserting between the two isolates numbers of the constituent divisions, the connecting symbol zero (0) and an appropriate digit representing Intra-array Phase relation.

General Intra-facet Phase Relation					=	t
Bias	“	“	“	“	=	u
Comparison	“	“	“	“	=	v
Difference	“	“	“	“	=	w
Influence	“	“	“	“	=	y

#### Examples:

1. General Intra-facet phase relation Q110t12 = Rigvedic and Yajurvedic relation
2. Bias Intra-facet phase relation Y33 Ou 1:1=City culture for rural people
3. Comparison Intra-facet phase relation V44, 31 Ov 2:3 = Comparison between the powers of Lok Sabha and Rajya Sabha
4. Difference Intra-facet phase relation Y31 Ow 5= Difference between rural and city folk
5. Influence Intra-facet phase relation Q41 Oy 2 = Influence on Mahayan and Hinayan;

Different Schemes of classification have made provision for phase relations. Treatment of phase relation in different schemes other than colon classification is inadequate. Colon classification is the only scheme which has made an elaborate provision for phase relation. BC2 has also made a good provision. In CC, six kinds of phase relations have been recognized. There is a need for intensive investigation to examine there relations and also to determine new phase relations, which may found useful.

#### 5.4. COMMON ISOLATES

Classification aims at division of the universe of knowledge into isolate ideas. Among these isolates some are specially related to one or more main subjects and some are common isolate as " an isolate idea denoted by the same isolate term and represented by the same number. For example the isolate idea 'Encyclopedia' which is a common isolate applicable to all main classes and which is denoted by the symbol "k" in CC and "03" DDC. Whenever the common isolate occurs it is denoted by the same symbol. For example

Encyclopedia of Physics

Encyclopedia of Chemistry

Encyclopedia of Economics

In the above examples, 'Encyclopedia' is common isolate and is denoted by the symbol "k" in CC and "03" is DDC.

##### **Common Isolates in CC**

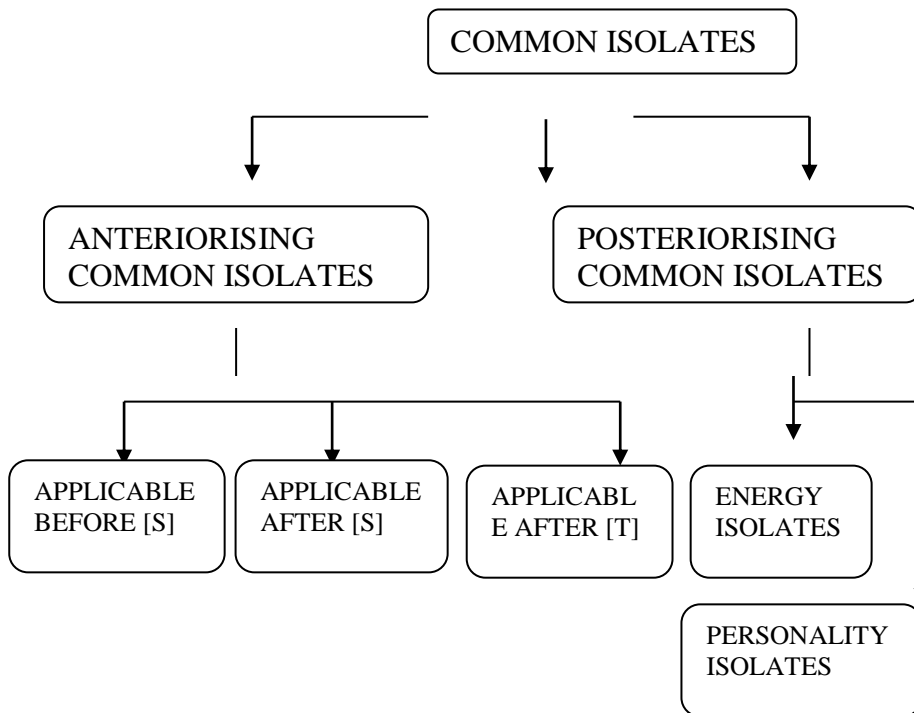
Common isolate falls under the following three categories.

- i) Common isolated dealing with the physical forms of the documents. For eg. The idea small or oversize to describe a document is a common feature. Symbols denoting this category of common isolates are shown in the collection number.
- ii) Common isolates on such characteristics as language of exposition (ie) Language in which documents is available form of exposition (such as table code or picture) the year of publication etc. These are common features external to the content of document symbols denoting this category of common isolates are shown in the book number.
- iii) Common isolates dealing with the common units in the structural patterns of knowledge such as bibliographies, bibliography criticism etc.

The first two categories of common isolates form the subject matter in the study of the collection number. The common isolates device deals with the third category of common isolates and it brings hospitality in the array of classes.



Following figure shows the type of common isolates in CC:



### **Anteriorizing Common isolate**

The word 'anterior' is taken to mean before the host class. That is in the field of knowledge there are certain isolates which if associated with a class will be sought for preliminary persual before the documents on the class are consulted. Documents in the category such as biography and bibliography are considered as approach materials to the subject. Such documents should be placed before the subject concerned|. For example it is better keep a bibliography on a subject does not decrease its extension. This is another lesson why books with Anteriorizing Common isolate should place earlier to the documents on Shakespeare earlier to works by Shakespeare cannon of helpful sequences will also demand that an anterior position should be given to approach materials.

Anteriorizing Common isolates are of three types

#### **Anteriorizing Common isolate applicable Before Space facet**

Anywhere after the main class

Eg History of Physics Cv

Anywhere after the personality facet

Eg History of English literature O1110

Anywhere after the marter facet

Eg History of Silver currency X61:1V

Anywhere after the energy facet

Eg History of cataloguing 2:5 Iv

### **Anteriorising Common Isolate Applicable After Space Facet**

Eg Statistics of India University education T4.44s

### **Anteriorising Common Isolate Applicable After time Facet**

Eg Indian University commission report T4.44 N 74

There are two peculiarities in the use of notational symbols representing anteriorising common isolates. First they do not require a connecting symbol when they are attached to a host class. To get anterior position as approach materials the anteriorising common isolates do not require connecting symbols. Some of the anteriorising common isolates like journals (m) have their own on individualizing facets.

For example journals or encyclopedia is to be individuals further on the basis of space (place of origin, and time ) the year of starting eg: Indian journal of Mathematics started in 1922/Bm 44.N22.

### **Posteriorising Common Isolates**

Posteriorising common isolates like criticism helps to narrow down the extension increase the intension of the subject to which it is attacked. They are Arranged after the documents on the class. The posteriorising common isolates are linked to the host class number by means of a connecting symbols as to secure posterior place. They are of two types

Personality posteriorising common isolates

eg : Library profession 2,b

Energy posteriorising common isolates

eg : As you like it 0111, 2,64, ( or ) 0111, 2j,64,A

criticism of As you like it 0111, 2j, 64, 11 eg (or)  
0111, 2j64, A : g

Almost all library classification schemes recognized the importance of common isolates and made provisions to include common isolates. In CC, they are called common isolates and in DDC they are termed as ' Standard Subdivisions' As a space saving mechanism these common isolates are listed separately without mixing up with the schedules of different subjects. In this lesson, details of common isolates In CC and DDC have been discussed.

### **Usage of the Concept 'Common Isolates' in DDC :**

The DDC began to think in terms of scheduling a common schedule for the extension and synthetics of classes. This was achieved in the second edition onwards, but named the schedule differently in different editions are given below:

DDC	Usage of Term
Edition Bos.	For Common Isolates
2 - 12	form Divisions
13 – 14	Common Sub-divisions
15 – 16	form Divisions
17 – 19	Standard Sub-divisions

### **Meaning of ‘Standard Sub-Divisions’ :**

The meaning of the term ‘Standard Sub-divisions’ as per the 19<sup>th</sup> edition, page No. xxxvi of DDC, is that virtually any subject or discipline may be represented in various forms in synopsis or outline in a periodical, in tables, in illustrations. Similarly, most subjects may have certain modes of treatment in common, theory, techniques, study and modes are designated collectively as standard sub-divisions, and they may be applied wherever they are appropriate.

Berwick Sayers highlights the concept of ‘form’ by stating that the form is differentiated as inner and outer form. The outer form is represented by dictionaries, essays, periodicals, etc., which have a definite physical form or form of presentation that is immediately recognized. Inner form denotes forms such as philosophy, history and theory. However both forms are closely coalexed with the subject.

### **Definitions :**

According to the Glossary of DDC 19<sup>th</sup> edition (page No. 1xxxii) ‘Standard sub-divisions are notations designating certain frequently recurring forms or methods of treatment applicable to any subject or discipline. They may be added as required to any number in the schedules’.

The standard sub-divisions schedule is designated as Table-1 in the DDC 19<sup>th</sup> edition. Let us examine the sub-divisions. The following are the summary of Table-1 :

- 01 Philosophy and theory
- 02 Miscellany
- 03 Dictionaries, encyclopedias, concordance
- 04 Special topics of general applicability
- 05 Serial Publications
- 06 Organization and management
- 07 Study ad teaching
- 08 History and description of the subject among groups of persons
- 09 Historical and geographical treatments

Almost all the above sub-divisions are further sub-divided and are enumerated and accommodated in the first 13 pages of DDC. In addition some sub-divisions are further sharpened by means of Devices like ‘Add from Tables’, ‘Add from schedules’ etc. (Refer Unit-1 p.69-72 for details of Devices).

**Examples :**

1. “Add from Tables” device used to sharpen the class number as given below:
  - (a) – 023 subjects as profession, occupation, hobby.  
Add Areas notation 1-9 from Table-2 to base number – 023-e.g. Subject as a profession in England 02342.
  - (b) - 024 Works of specific types of users  
Add ‘Persons’ notation 03-99 from Table-7 to the Base number –024 e.g. works for engineers-02462.
2. “Add from schedules” Device to sharpen the following sub-divisions
  - (a) – 015 scientific principles  
Add to base numbers – 015 the numbers following 5 in 510 – 599.  
e.g. Mathematical principles – 0151 – 074 Museums collections exhibits –07401 – 09 Geographical treatment.  
Add to the base number –0740 the numbers following 708 in 708.1 – 708.9  
e.g. Museum and exhibits in Pennsylvania – 0740148.

In Table – 1 three is a table of precedence and can be used as a device for arranging subject by ethnic groups or classes of persons (vol. 1p xxv).

The standard sub-divisions are never used alone but may be used as required with any number from the schedule. Normally a decimal point is always inserted following third digits of any number thus constituted.

**Use of Standard Sub-divisions :**

Generally the standard sub division have one ‘0’ (zero) as first digit. But sometimes they are to be the significant notation with two or more zeros. This is because some direct sub-divisions would have been provided with zero as the first digit in the schedules and in such case, to avoid homonym in notation instructions are provided to use the standard sub-divisions with two or more zeros so as to secure precedence over the direct sub-divisions. By the addition of two or more zeros, the division is made general one (DDC vol. Page No. 1vi).

Let us examine the usage of two or more zeros in the application of standard sub-divisions.

### **Use of more than one '0' (zero) in Standard Sub-divisions :**

In DDC Vol. 1. page No. xliv. It is observed thus 'In some classes, for various reasons, notation beginning with '0' is or has previously been used for another purpose in which case the classifier is instructed to use two 0s.

### **Use of Two 0s for Standard Sub-divisions :**

For example 335 stands for Socialism and related system. Under this, there is instruction 'Use 335.001 – 335.009 for standard sub-divisions. Hence for 'Miscellany of sicialism and related systems, the class number is 335 002 since 335.002 has been enumerated for "Utopian systems and schools" (Vide DDC Vol. 2, page No,286) Likewise 345 criminal law.

Use 345.1001 – 345.009 for Standard Sub-divisions.

Hence for Journal of Criminal law the class number is 345.0005 as 345.05 is enumerated for 'General Criminal Procedure' (DDC V. 2, page No.363).

On some occasions, the classifier is instructed to use three or even four zeros for standard sub-divisions. Let us are where such instructions are provided in DDC.

### **Summary**

Different Schemes of classification have made provision for phase relations. Treatment of phase relation in different schemes other than colon classification is inadequate. Colon classification is the only scheme which has made an eleaborate provision for phase relation. BC2 has also made a good provision. In CC, six kinds of phase relations have been recognized. There is a need for intensive investigation to examine there relations and also to determine new phase relations, which may found useful.

Almost all library classification schemes recognized the importance of common isolates and made provisions to include common isolates. In CC, they are called common isolates and in DDC they are termed as ' Standard Subdivisions' As a space saving mechanism these common isolates are listed separately without mixing up with the schedules of different subjects. In this lesson, details of common isolates In CC and DDC have been discussed.

## Self Assessment Questions II

1. Three types of phase analysis are \_\_\_\_\_
2. v is the \_\_\_\_\_
3. 54 in area table of DDC denotes \_\_\_\_\_

## Unit Questions

1. Explain the salient features of zone analysis.
2. Write a note on systems and specials.
3. Describe in detail the phase analysis
4. Explain the role of common isolates in CC.
5. Examine the role of common isolates in DDC.

## Further Reading

1. Ranganathan (S.R.) Prolegomena to Library Classification Ed. 3, 1967.
2. Ranganathan (S.R.) Elements of Library Classification, 1962.
3. Palmer (S.I.) and Wells (A.J.) Fundamentals of Library Classification.
4. Malby (A) Ed. Sayer's – Manual of Library Classification.
5. Krishankumar Theory of Library Classification, Ed.2, 1981.
6. Needham (C.D.) Organising Knowledge in Libraries, 1971.

## Answers to Self Assessment Questions

### I.

1. The analytical study of the organization of the isolated ideas in an array for designing the symbolic notation.
2. Enumerated Common Isolate
3. B

### II.

1. Phase relation, facet relation, array relation
2. Anteriorising common isolate
3. India



