UNIT 6 TRANSLATION AND TECHNICAL TERMS

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6.0 OBJECTIVES

This Unit introduces you to the concept of technical terms in various disciplines. After studying the Unit you should be able to

- define a word;
- explain the need for technical terms;
- distinguish a word from a technical term;
- describe the strategies involved in coining technical terms;
- give a historical description of the coining of technical terms in Hindi.

6.1 INTRODUCTION

You have already studied in the four units of Block 1, that translation is the process and product of the activity of transferring the message and content, of the text from one language into an equivalent text in another language. You have also learnt how the study of language and linguistics is important in the art of translation. Hence, it may not be necessary to repeat the facts about the nature and significance of translation here. In the first unit of this block we discussed some of the fields of translation. Let us now study the importance of technical terms in translating scientific texts. Technical terms are specific to specific fields of knowledge. For example 'femur', the name of a bone in the thigh is a term used in the field of knowledge called anatomy. Since this term occurs only in anatomy, it would be difficult to translate this into another language, unless the society speaking that language has developed a field of knowledge called anatomy. It is also true that, in the modern world, no two societies have the same kind of development. For example, a society may be making rapid strides in space science and creating a large number of words in that field, whereas another society may be specializing in agricultural sciences and creating a different set of technical terms for that particular field of study. Consequently, the two languages may have to depend upon one another for technical terms.

It is true that, human nature being what it is, most languages have their own set of basic vocabulary and one can expect to find most of these words like body parts, words related to nature, words related to basic actions like go, come, talk etc. in most

languages. This need-based communication is common to most societies. Thus it may not be difficult to translate such ideas from one language into another with the existing set of words.

The fields of knowledge differ vastly from one society to another. The advancement of science has a varying pace in different societies. In some societies it is rapid while in others it is slow. Thus societies which create knowledge also create the words that describe the basic concepts. But in the modern world, no society which wants to develop can do without knowledge. Hence, even if a society does not create knowledge by being a forerunner in the field, it has to acquire knowledge from more advanced countries so that it can keep pace with new developments. The grafting of knowledge from one society to another is accompanied by adopting a set of technical terms in the source language for expressing the concepts. The grafting of knowledge is usually done through translation. From where do we get the words to translate texts pertaining to specific fields? Do we translate technical terms? We can translate technical terms only when we have them in our language. Otherwise we have to create technical terms for translating the specific texts. Thus we may have to create a set of technical words when needed. This again is a difficult task. Can we not simply take all the technical terms from another language and use them in our language? We will discuss these questions later in this unit.

In addition to these, there are yet other kinds of technical terms in all languages. We discussed earlier that all communities have a culture of their own. The symbols and signs of one language reflect the meanings assigned to them by society. सिंधूर (vermillion) in Hindu society is just not some colourful powder. It symbolizes the right of a married woman to wear it as a sign of living happily with her husband. The forfeiture of that right on being widowed (where widowhood is a curse) shows the significance of the word as a cultural concept. Hence erasing the vermillion spot from the forehead is not simply an act of removing make-up. It signifies the great loss that has befallen a woman. Usually in describing the problem of translating such concepts, we tend to club them as problems of translating cultural words or items. How do we tackle this problem? Borrow the original word, like atman, moksha etc. to denote the concepts of Indian philosophy? Or can we create new technical words? Or use an approximate translation like vermillion for सिंधूर, the sacred thread for जनेऊ or यज्ञोपवीत, the auspicious turmeric coloured rice for अक्षत in Hindi and explain the cultural meaning in a footnote?

Finally the word 'technical term' itself calls for some explanation. Is the word सिर (head) a technical term? Yes it is, though it is a word of common parlance. It signifies a part of the body, an anatomic word. But all other idioms connected with it as सिर चकराना, सिर फिर जाना, सिर खाना are not derived from the original terms of anatomy. Thus all words can have a technical sense with reference to a particular field of knowledge. Sometimes the same word may have different meanings in different fields of study such as Engineering: plant संयंत्र (such as a power plant)

Horticulture: plant पादप (a plant that grows from the seed)

In this unit, we will study the definition and use of technical terms, discuss how they are adopted or created in a language and analyse how they are translated. We will also study the efforts undertaken for adopting/creating technical terms in Hindi, for expressing concepts in various fields of knowledge.

6.2 WORDS: NATURE AND SIGNIFICANCE

As you have studied earlier, the word is a linguistic sign – an arbitrary symbol used to signify the meaning of an object (like 'table') or a concept (like 'propriety' i.e. what one should/what is proper to do). Usually a language assigns a word to most of the things, artefacts, ideas, concepts that society has. The word carries the meaning that society assigns to it, to denote an object or an idea used in the community. Here we would also like to explain the meaning of 'vocabulary'. Vocabulary is the meaning of the set of words used in a particular language. Thus English vocabulary would denote all the words used in the English language.

For the sake of comprehension, we have mentioned so far that each word has a meaning.

Languages are too complex to be explained by such simple statements; they are meant only to understand the basic principles involved. In reality, most words of a natural language display a whole range of meanings and it may be difficult to indicate what its meaning is etc. For example, 'head' is a part of the body, but it is also used in the following contexts:

a head of	headmaster
head of the table	head towards
head of the nail	headless

You may see some connection in the above usage, wherein the top position or the chief position is indicated. But, there are so many words which display entirely different and unconnected meanings, for example, fine – pecuniary punishment; nice. Words of this sort might lend themselves to the figure of speech called *pun*. Let us illustrate this with an example. A punster once said that he can compose a poem on any subject the king desired. The king asked the punster to compose a poem on him. The punster said, "The king cannot be a subject!" Here subject means two different things – a topic for discussion; people subject to the authority of a king. Such instances where a word has more than one meaning is called polysemy (many meanings). Words of common usage are usually polysemous in nature. That makes the task of translation a bit difficult. A translator once translated the word 'submarine pipes' in the context of laying pipes under the sea in the Bombay High Offshore drilling site as पनडुब्बी पाइप। The real translation should have been समुद्रतलीय पाइप।

In Indian poetics we talk about the three "powers of words" (शब्द शक्तियाँ) i.e. the three kinds of meanings. अभिधेयार्थ is the denotative meaning i.e पेड़ Tree. This is also called the literal or lexical meaning. लक्षणार्थ अथवा लक्षयार्थ is the figurative meaning of a word. When we say a person is a donkey or that वह लड़की गाय है (to mean that she is like a cow), we use these words to imply some qualities in the person. The figurative meaning derived from the original meaning of the word replaces the denotative meaning and is usually shown in the dictionary as an idiomatic meaning or metaphorical meaning. व्यंजनार्थ is the connotative meaning. Words come into full play when they connote some meaning in addition to what they denote. For example 'home' denotes the meaning of a place where one lives i.e. the house; figuratively it means the people living in the house, one lives in i.e. the family. But when we say home, the word connotes the meaning of security, happiness and pleasurable life that a home provides. Thus, the word 'home' has a suggestive meaning, Another variety of connotation is sarcastic meaning, whereby the person conveys a meaning exactly the opposite of what his/her words denote. For example, when we say to a person who has committed a foolish action 'you are great', we connote how foolish s/he has been. When we really praise a person using these words we stress the verb. When we intend to convey the suggestive meaning, we raise the tone of the last word. Thus, the suggestive meaning is achieved by the intonation. Lastly there is another kind of suggestive meaning, which conveys the intent of the speaker by the context of the utterance. If one says it is already eight o'clock, s/he may mean it is time to leave or it is time to dine. One should know what the speaker intends to say by this utterance. In modern linguistics, this is called 'pragmatic meaning'. Thus connotation is a complex phenomenon in the study of meaning.

The skilful use of words in different meanings, shows the creative faculty of the speaker or the author of a literary work. The listener or reader is enthralled by the array of meanings that the utterance displays. But can we say the same thing about the meaning of words used in a scientific or legal text. In sciences, the word should mean precisely what it denotes. In spoken language 'energy' conveys a range of meanings or ideas. But in physics 'energy' is the amount of power force. Similarly words in legal parlance should be unambiguous. If a person is the cause of killing someone on the road in an accident, we don't say that s/he has murdered a person. Murder denotes the intention to and the resultant action of killing. These contexts have to be clearly and unambiguously stated. The technical terms of each field of knowledge define the context of the meaning in specific and unambiguous terms, so that what they convey is clear to both the speaker and the listener (or the writer and the reader).

Exercise I

Q 1: There are three technical terms given below. Explain the cultural context in two lines each.

सिंदूर .....

जनेऊ .....

अक्षत .....

Q 2: The technical term "plant" has a different meaning in engineering and horticulture. Explain the contexts in four sentences.

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Q 3: Explain the difference between a common word and the technical term in about four sentences, with suitable examples.

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Q 4: You have learned in this unit that "Head" can be used in different meanings in many contexts. Give two such words from English and Hindi and list three uses of each.

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Q 5: What is a technical term? Explain its characteristics in about ten sentences.

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Q 6: Here below is a list of technical terms, identify the technical term and write the discipline they belong to in the space provided.

संसद, अद्वैत, ऊर्जा, स्तनपायी, सामंतवाद, तापमान, क्रोमियम, पराग, छायावाद, संवेग, जनतंत्र, मुद्रास्फीति, सांप्रदायिक

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6.3 TECHNICAL TERMS: DEFINITION AND CHARACTERISTICS

The specific words of fields of knowledge viz. chemistry, physics, philosophy, political science etc. are called technical terms. They define the meaning of the word in a particular context in *that* field of knowledge in a clear, unambiguous way. The technical words, as opposed to the common words of common speech should have a one-to-one correspondence i.e. each word should have only one specific meaning, so that there is no ambiguity about the meaning it conveys. Technical terms are conceptual words i.e. they define the meaning of a word in a proper context.

For example, let us examine the figurative meaning of a word, which :

i) is related to the original meaning of the word in some of its features

ii) is displaced from the original meaning of the word

iii) and is arbitrary i.e. approved by the society.

Hence, the pun of 'subject' (See 6.2)is not covered by (i) but 'donkey' is covered, as donkeys are symbolized as foolish creatures. 'Donkey' is a displaced meaning as a human being cannot be an animal too. The rule of arbitrariness applies to 'cow'. In Hindi this word applies to a woman and is a word of praise. It would mean a calm and quiet girl with pleasing manners; in English this applies to a woman too, but is a derogatory word. It would mean someone slovenly and uncouth. Thus the person is not likeable. The definitional nature of technical terms, in effect, delimits the context of their use in such a systematized manner, that one can easily see what it really means.

We come to the next question of the difference between common words and technical terms. We discussed earlier that 'head' is also a technical term, so are the Hindi words हाथ etc. How do we then differentiate these? We mentioned one criterion by saying that technical terms are definitional in nature and have only one sense in the subject in which they are used. Thus the technical term 'head' is different from the common word 'head'.

A dictionary of technical terms will not show the other figurative/contextual meaning of that word. On the basis of this criterion, an existing word of the language can be defined to convey a specific meaning in a specific field of knowledge. Alternatively, if there is no existing word for a specific concept, one could borrow a term from other languages or create an entirely new word.

The related concepts may have to be expressed through related words. The existing word may not lend itself to coining related words. Hence, it becomes unsuitable as a technical term. For example, मान लेना 'to accept' is fine, but it cannot be used to derive words like acceptable, acceptability etc.

As a concept word the technical term has to be learnt in its proper context. For a lay person, it may not mean much, unless the person has studied the subject. If a sentence carries more than one technical term, it becomes progressively difficult, as all words should be understood properly for getting the meaning of the sentence. That is the reason why legal language or the language of logic or a specialized science like marine biology sounds strange and incomprehensible. Nevertheless, that is the nature of the language of that discipline, the language can be made simpler by using small sentences, by elaborating the description. But simplification cannot be achieved by not using the technical terms, as that would give rise to ambiguity.

We will have to adopt a similar approach in translation. We can use small, comprehensible sentences, elaborate the sentences by explaining the meaning of technical terms, but cannot avoid using them. For example, in a text on biology we may come across the word 'कशेरुक' (vertebrate) twenty times. We can translate as "रीढ़ की हड्डी" वाले प्राणी अर्थात् कशेरुक in the first instance, but will have to use the technical terms (for the sake of brevity) the rest of the 19 times. The word becomes easier with constant use.

Some people ask why new, unfamiliar technical terms should be used in Hindi? Why not use familiar words of Hindustani origin? These persons do not have any idea as to what technical terms are. They seem to have a feeling that all knowledge can be explained through day-to-day language. Spoken language does not differentiate between 'country', 'nation' and 'state', but in political science we do. Hence we need three similar terms in Hindi, so that the concepts can be distinguished. Hence we use देश, राष्ट्र, and राज्य respectively for these. We will need new terms for various concepts: that makes specialized language difficult.

There is a saving factor in the use of technical words. The structural similarity of words denoting related concepts gives us a clue to the meaning. For example, spheroid (sphere + oid) that looks like a sphere = गोलाभ (गोल + आभ). Once having learnt this word, you will not have great difficulty in understanding the following words मानभाव (humanoid), नराभ (anthropoid).

Similarly related concepts expressed by words derived from a main word are also easy to understand. For example, learning the concept of राष्ट्र (nation) will help us understand the following words.

राष्ट्रीय	national	राष्ट्रीयता	nationality
राष्ट्रवाद	nationalism	राष्ट्रवादी	nationalist
राष्ट्रविरोधी	antinational	राष्ट्रव्यापी	nationwide

This paradigm will also help us to understand terms like जातीयता, समाजवाद, समाजविरोधी, विश्वव्यापी , समाजवादी, मार्क्सवाद etc. Thus the learning of technical terms in a language proceeds in a geometrical progression i.e. doubles itself every time. We may quote the adage that only learning makes learning easier.

On the basis of the above discussion, we can state that technical terms have the following characteristics:

i) the technical term should be easy to pronounce and clear in its structure. If a borrowed word does not fit into this, it should be neutralized;

ii) it should have only one specific meaning in a specific field of knowledge;

iii) its meaning should be definable in a clear and pin-pointed manner, so that the context of its use is clear;

iv) the definition of context can differentiate related concepts as speed and velocity or heat and temperature, whereas common, spoken language treats such words as synonymous.

v) the words thus adopted should be amenable to further deviations for expressing related concepts;

vi) the derivatives should be so structured that similar words of the same discipline or across the disciplines can also be understood on the basis of similar words. For example, the suffix 'tis' or 'sis' in medicine suggests a disease causing swelling/inflammation accompanied by pain, such as arthritis, meningitis, elephantiasis, conjunctivitis.

Summing up, it may again be mentioned that no specialized field of knowledge can develop without the use of appropriate technical terms. They can either be acquired from other languages or coined using words and suffixes etc. available in the language. In subsequent sections we will discuss how technical terms have been acquired/coined in Hindi.

6.4 APPROACHES TO DEVELOPING TECHNICAL TERMS

When Hindi became the official language by the provisions of the Indian Constitution in 1950, the need was felt to create literature in Hindi on various disciplines, so that it could be adopted as a medium of instruction. This again necessitated the availability of

technical terms pertaining to different disciplines. But, since Hindi was not being used for such special purposes before 1950, the process of preparing such words had to be started immediately. Though we are quoting Hindi as an example, this was true of all Indian languages at that time. The options were to i) draw heavily from Sanskritic sources, to the near-exclusion of existing words, ii) adopt words from English and other international languages, without bothering to coin new words, iii) try to coin words from the existing stock of Hindi and Urdu, and iv) to combine the above processes judiciously and adopt a new strategy. Now let us discuss these theories with suitable examples.

6.4.1 Revivalistic Approach

Proponents of this approach say that Sanskrit, as the mother language of all Aryan languages in India, has a great potential for creating thousands of words. If one can use the roots and prefixes/suffixes of Sanskrit, one can coin as many words as possible. Hence, according to them, there is no need to borrow words from any other sources. Dr. Raghuvir, the author of "Comprehensive English-Hindi Dictionary", was an ardent advocate of this approach. He believed that with the proper use of Sanskrit roots and prefixes/suffixes, one can derive technical terms in a systematic manner. As an example, he discusses in detail colour terms. He maintains that with 4 base words रक्त red, नील blue, पीत yellow and हरि green 20 more words can be coined by combination, as reddish yellow etc. Using a combination of 5 prefixes for brilliance (brilliance) as वि, नि etc. and 5 prefixes for saturation (shades) as अप, अव etc. One can derive 600 terms (24x5x5). In English the different hues are mentioned by explanatory terms as oyster white, peacock blue, olive green, etc. Still English does not differentiate between 600 words of colour. Dr. Raghuvir says that the possibility of creating words "demonstrates the superiority of a system of scientific nomenclature to an arbitrary one" (as in English).

The main features of his coining of words are:

i) If a proper term is available from an Indian source i.e. Sanskrit, Pali, Prakrit or Apabhransh, as compared with taking one from English, the former is preferable. He took words like शुल्बारि (sulphur) from *Abhi Chitamani* and कोशविक्रय (auction) from Kautilya's *Artha Shastra*.

ii) A classical word should be preferred to a commonly known word. Thus he preferred शुल्बारि for the common words गंधक and नीलाभ.

iii) If a word is not available, new words should be coined on the basis of Sanskrit forms. The following words may indicate how he applied this rule for coining new words.

Though some of these words were rejected by society at large, words at v) vi) vii) and viii) were accepted by usage.

iv) He even advocated the course of creating parts of words from Sanskrit and using them for coining more words. For example he took आतु as the equivalent of ium/-um from धातु (metal) to form words like महातु platinum. तेजातु चुर्णातु Radium 'Calcium', हर्यातु farium etc. Similarly he took अति from वति 'air' to form word like मंदाति 'argon', भूयाति nitrogen etc. which has on/en in English.

Dr. Raghuvir was an ardent revivalist trying to exploit the power of coining words from Sanskrit. In this process he coined very difficult words to the exclusion of words of daily usage. Nonetheless, scholars are impressed by his pedantic approach. He maintained that new concepts should have new terms. Foreign words are mere loans and do not have a root in Indian languages. Hence he maintained that using 600 roots of Sanskrit and 26 prefixes and 80 suffixes one could coin millions of words.

Scholars criticized him for coining highly Sanskrit-based words which were difficult to understand. Some scholars thought it was appropriate to adopt the known English, Arabic-Persian words. But Dr. Raghuvir has suggested ways of creating a pan-Indian technical terminology. Though, it must be pointed out his dictionary was not entirely adopted by agencies responsible for coining new words.

6.4.2 The Approach of Adopting Words

Many scholars are in favour of adopting words from other languages. As scholars in the field know the words, they would be able to use the language effortlessly. For example the sentence आक्सीजन और हाइड्रोजन के मिलने से पानी बनता है will be easier than प्राणवायु और उदजन के मिश्रण से जल का आविर्भाव होता है to those who know the subject through the medium of English. It is also contended that borrowing words from other languages will enrich the language. But the problem is how many words can be assimilated in a language? Can we use sentences like इंडियन इकानामी की पालिसी को डिक्लैर करते हुए.... ?

The Government of India constituted a Committee in 1940 under the Chairmanship of Avtar Hyder for suggesting ways of preparing technical terms. The Committee had suggested that in order to keep abreast of scientific developments abroad, we must use 'international technical terms'. The opinion of Maulana Abul Kalam Azad in 1948 that we need not take up the burden of creating an Indian terminology also found favour with scholars. The University Commission of 1949 had consequently adopted this view. The Board of Technical Terms in 1950, approved this decision. While approving the decision, it defined international technical terminology as "those scientific and technical terms which are being published in the proceedings of the international councils of science organization." But no clear definition of international terminology emerged. Scholars like Tarachand, Suniti Kumar Chatterji, Babu Ram Saksena, Shanti Swaroop Bhatnagar, J.C. Luthra, Birbal Sahni and J.C. Ghosh defined it differently. Some felt that only English words should be considered international. Some urged the words to be adopted in the original, some favoured a transliterated version.

The problem of adoption has two aspects. If we adopt *all* the technical words, then language will look foreign in everything except structure as shown in the previous example. On the other hand, if we adopt only the most frequent words like oxygen, we will not be able to produce other words like oxide, oxidize etc. using suffixes of Hindi. Some scholars feel that words like oxidized can be used. We will discuss this in the next section. Adoption of words will also have to be done by a process of 'naturalization'. For example Urdu uses कबीना for Cabinet.

6.4.3 The Indigenous Approach

This approach believes in using the words of day-to-day usage from the Hindi-Urdu combine called Hindustani and building on them. The votaries of this approach are Pandit Sundarlal, Jaffar Hassan, members of the Hindustani Cultural Society and Osmania University. They want to use Hindustani words from all sources – Sanskrit, Arabic, Persian, Turkey, English etc. The main terminology representing this approach are the "Hindu Terms of Sociology" published by the Osmania University in 1952 and the book called "हिन्दुस्तानी के लिए शब्दावली कानून" published by the Hindustani Cultural Society in 1954. They use the indigenous suffixes to coin further words as कानूनियाना legalize, पिछदर्शन 'retrospect', स्टैंडर्डियाना 'standardize' etc. Similarly ढगित, तजित take Sanskrit suffixes, Pt. Sundarlal coined words like अचानकी 'emergency', रूप-बिगाड़ 'disfigure', आवाजाई 'communication', etc.

The efforts of these scholars, did not gain ground because the coining of words on this pattern could not be stretched far, as it did not have a solid structural support. It had its share of sporadic success in a few words, but could not stand up to the test of sound methodology.

6.4.4 The Eclectic Approach

When all theories fail, we resort to the eclectic method i.e. the combination of the good points of all approaches and rejection of all difficult processes. Most scholars now believe that new words should be coined in a systematic manner, using Sanskrit roots and prefixes/suffixes. They also feel that the use of internationally used terms like sputnik, radium, pulsar should be adopted. New words may be needed, in some cases, but current words should not be discarded in other cases. According to the proponents of this approach, the building up of technical terms may have to adopt various approaches. Use of current words as technical terms should be given the first place.

Adoption from various sources – from foreign languages and other Indian languages – should also be given prominence. The words so adopted may have to be naturalized like त्रासदी for tragedy and अकादमी for academy – where both these strategies do not work, we should go in for coining words based on Sanskrit forms. Here the formation of hybrid words using Sanskrit suffixes like आक्सीकृत 'oxidized', रेडियोधर्मी , 'radioactive' should also be accepted. In a sense, we practice, today, only the eclectic approach as the methodology for building up a technical terminology for Hindi.

6.5 TECHNICAL TERMS IN HINDI

The coining of technical terms for a modern developing language is an organized task. It has to be done by an agency, rather than by many individuals, as otherwise we may end up with a number of terms suggested for the same concept by different individuals. Hence, the responsibility has been undertaken by the Govt. of India (Ministry of Education). Initially the Ministry set up a Board of Scientific Terminology in the year 1950. When the Central Hindi Directorate (CHD) was set up in 1960, the work was taken up by it. With the incorporation of the Commission for Scientific and Technical Terminology (CSTT) in 1961, the responsibility of coining words has been taken over by it.

The coining of technical terms not only needs a centralized agency, but a clear-cut policy. The first policy statement comes from Article 351 of the Indian Constitution, which is a directive for the enrichment of Hindi. On the basis of the directive, the agencies responsible for coining, the technical terms had outlined the policy on which their efforts are based. Here below, we give the preface of 3 such works which spell out the underlying policy and the strategies adopted for coining technical words.

6.5.1 CHD Statement -1962

The Central Hindi Directorate brought out a volume called "A Consolidated Glossary of Technical Terms" in 1962. The preface of that glossary gives you an idea of how the work was done.

CONSPECTUS OF PRINCIPLES UNDERLYING THE PREPARATION OF SCIENTIFIC AND TECHNICAL TERMINOLOGY

The work of preparing Hindi terminology related to scientific disciplines and administrative procedures has been going on under the direction of the Board of Scientific Terminology set up by the Ministry of Education in December, 1950. The Board laid down some basic principles for this work which were elaborated in practice by the various committees of experts working on different subjects. The major principles and the methodology followed by us are discussed in the following paragraphs.

1) As directed by the Board, international terms have normally been left untranslated, only their transliteration being given in Devanagari script. In the absence of any standard definition of international terms, the matter was referred to the Board in 1954 and the Board recommended that where a scientific or a technical term is used in at least three European languages in more or less the same form, it should be considered international. This broad recommendation was qualified by another, namely, where a term denoted a thought process, it should, as far as possible, be translated and not adopted in its original form.

In accordance with the spirit of this recommendation of the Board, the subjectwise Committees of Experts have, in the light of their own particular requirements and contexts, throughout been adopting without change or with only minor phonetic changes to suit Hindi pronunciation, all scientific and technical terms denoting specific objects which are widely used in the most advanced languages of the world or at least in three European languages. It follows that all terms occurring in English cannot *ipso-facto* be considered international terms. Actual investigation of the vocabulary of different languages has shown, however, that there exists a large body of scientific and technical terms which have been adopted by the most advanced languages of the world. A few

examples of such terms are:

1) Units of weights and measures etc., e.g. metre, gramme, erg, dyne, calorie, litre, and so on.

2) Terms based on proper names commemorating the person who invented them, e.g. Ampere, Volt, Fahrenheit, Watt, and so on.

3) Other terms which have gained practically world-wide usage, e.g. Asphalt, Radio, Petrol, Radar, and so on.

4) Scientific names of new elements, compounds etc., e.g. Aluminium, Oxygen, Hydrogen Barium, Carbon, Chromate, Dioxide, and so on.

5) Binomial nomenclature in sciences like Botany and Zoology.

During the course of the last 100 years or so, however, indigenous terms have also come into vogue in our own languages for certain scientific terms which are of international usage. In such cases, we have given preference to the indigenous terms, since they have already gained currency, are widely intelligible and have developed precise connotations. Examples of such terms are: 'telegraph', for which the word 'तार' in Hindi has established itself; 'continent' for which the word 'महाद्वीप' is widely current. This is in accordance with our basic principle that our vocabulary must be as widely intelligible as possible and must draw to the fullest extent on the existing vocabulary of Hindi and other Indian languages. On the same principle we have retained 'अणु' for 'molecule' and 'परमाणु' for 'atom'. But for the further subdivisions of the atom representing later discoveries, viz. 'electron', 'proton', 'neutron', etc., we have retained them as such.

2) In addition to terms of international usage, many words of English and other European languages like Portuguese and French have become an integral part of Hindi vocabulary. They have also been retained as such. Examples of such terms are: engine, engineer, form, machine, police, station, ticket etc. Loan words like these form a very important part of the vocabulary of all living languages and they reflect a continuous and inevitable process of give and take which goes on whenever a language comes in contact with other languages, and the greater and wider such contacts are the larger is the number of loan words in the language concerned. English is a classic example of this process. The English speaking people in the course of history came in close contact with practically every nation in the world and consequently the English language has borrowed extensively from the vocabularies of almost all languages of the world. Hindi, in common with other major languages of India, has been in contact with European languages, particularly English, for more than 150 years and it was but natural that it should borrow from as well as give to these languages a large number of words which have in course of time been assimilated by the language and have passed into common currency. It would have been highly unpractical and linguistically disastrous to have discarded these words and to form new and unfamiliar coinages in their place.

Some of these loan words, however which have not so far been completely assimilated in the language but which are being used for want of any indigenous equivalents have been retained, but side by side suitable Hindi equivalents have been coined for them in order to facilitate the understanding of the precise import of these terms. It is hoped that in course of time these new equivalents suggested will acquire the full and exact sense of the English words which would then be dispensed with. A few examples of such words are 'act' (in the legal sense) which has been retained but a Hindi equivalent 'अधिनियम' has also been suggested for it; 'thermometer' for which तापमानी has been suggested. This bilingualism is an essential and a very significant feature of our terminology.

3) Faithful representation of the complete meaning of the original term has been our primary concern. The Committees of Experts go thoroughly into the technical concepts behind the term so that its entire history is laid bare. This ensures that before selecting or coining a word the most up-to-date scientific ideas associated with the original technical term are taken into consideration. At times, it was felt that the original technical term did not fully represent the concept for which it stood and was either a misnomer or an instance of arbitrary usage. In such cases, we chose independent Hindi equivalents which would be closer to the concept rather than the original word. Thus, in

Botany we chose समवृत्ति for 'analogous', in Chemistry संचायक सेल (and not द्वितीयक or गौण) for 'secondary cell', and in Mathematics समाश्रयण for 'regression'. It is because of this approach that we have often been able to suggest more factual and definitional Hindi words than the original terms. In Agriculture, for example, 'intensive farming' and 'extensive farming' have been translated as 'श्रमप्रधान कृषि' and 'भू-प्रधान कृषि' respectively; in Physics 'barometer' (which literally means only भारमापी) has been translated as 'वायुदाब मापी' and 'clinical thermometer' as 'ज्वरमापी'. All these terms represent the concept or the object involved much more faithfully than the corresponding English terms.

4) The fullest use has been made of the existing vocabulary of Hindi and all current words which either already possess precise and specific connotations or which can be given such precise and specific connotations have been accepted by us. Our investigations have brought to light the vast potentialities of the existing vocabulary of Hindi for expressing scientific notions and has made it possible for a large part of our scientific and technical terminology to belong to this existing stock of vocabulary. This is not surprising since in this country we have a long tradition of many arts and sciences and a large number of technical terms relating to them are current in Hindi and other Indian languages. Special efforts have been made to collect all such terms in Hindi and after careful evaluation as many of them as passed our test of severe accuracy have been incorporated in our terminology. Taking one associated group of military words, viz., attack, invasion and charge, we have fixed 'हमला' for 'attack', 'चढ़ाई' for 'invasion' and for 'धावा' 'charge'. In the field of commerce, we have discovered such terms as 'धनीजोग' and 'साहजोग' which express correctly the meanings of 'bearer' and 'cross cheques' while 'खाते' and 'नामे' are used for 'credit' and 'debit' respectively. Such precise terms have been readily accepted by us since this valuable terminological material will help in reviving links with our technical heritage and at the same time bring the knowledge and practice of modern science nearer to our people.

5) An investigation into the technical terminology of our ancient and medieval literature has also been made, and a very large number of such old terms have been utilised by us wherever they could serve the present day contexts of different sciences. This investigation has been particularly fruitful in the field of Politics, Law, Mathematics, Medicine and Military Science. A few examples of interesting old terms discovered and accepted are: 'संश्रय' for 'alliance'; 'कलन' for 'calculus'; 'वाहिनी' for 'battalion'.

6) Our insistence on strict conceptual accuracy which is a *sine qua non* of our work has in some cases necessitated the rejection of current terms and their replacement by new and more accurate words. To give an example from Physics, the current Hindi word 'ताप' was being used for 'heat'. In our terminology, we have fixed 'ताप' for 'temperature' and another word 'ऊष्मा' has been chosen to represent 'heat', as those two are altogether different concepts. Similarly, the term 'स्नायु' which was so far being used for 'nerve' has been given up in favour of a new word 'तंत्रिका' since the latter expresses the concept behind 'nerve' much more precisely. The word 'स्नायु' has been fixed in the meaning of 'ligament'. This process will impart to our scientific vocabulary the essential quality of precision and will help it to standardise itself.

Where a technical concept embodied in a particular term has either undergone a change or has been enlarged with the result that the current word so far in use has become inadequate to represent the new concept, it has been replaced by a more precise term. Thus 'आबकारी' has been replaced by 'उत्पादन शुल्क' for 'excise duty', as the modern concept of the term has greatly enlarged itself in recent times. Similarly, because of the change in the connotation of the term 'bureaucracy', its current Hindi equivalent 'नौकरशाही' has been replaced by 'दफ्तरशाही'।

7) Conceptual evaluation of terms in associated groups is another special feature of these terminologies. While suggesting an equivalent for a technical term, all the allied terms representing varying shades of concept are considered together and care is taken to ensure that the allied shades of meaning of these sets of terms are clearly brought out

in the equivalents suggested by us. Taking one group of associated terms from Agriculture, we find that the terms 'aroma', 'flavour', 'taste', and 'fragrance' represent one conceptual range. All these terms were considered together and Hindi equivalents were suggested for each, viz, 'सुवास' 'सौरभ' for 'aroma', 'सुरस' for 'flavour', 'स्वाद' for 'taste, and 'सुगन्ध' for 'fragrance'. These equivalents are all current words but they have now been fixed to denote precise connotations.

8) Our desire to give these terminologies a pan-Indian character and to facilitate their adoption by other Indian languages has led to a two-fold effort on our part. First, we have tried to exploit to the full all such terms as are common to more than one Indian language since such terms represent the nucleus round which a full pan-Indian vocabulary can develop. Secondly, many words from languages other than Hindi have been chosen to represent scientific concepts, the criterion being their phonetic and linguistic character facilitating their absorption into the Hindi vocabulary. This two-fold effort is indicative of a definite policy of our terminological work since this work is to be accepted eventually by all modern Indian languages. A few examples are 'बन्धनी' for 'brackets' and 'बेंगची' for 'tadpole' from Bengali; 'पावती' for 'acknowledgement' from Marathi; 'निवल ' for 'net' from Kannada; 'भल' for 'slit' from Punjabi.

9) Coinage of new terms has been our last resort when new concepts had to be precisely expressed for which no existing words or expressions in Hindi or in other Indian languages were found suitable and when the retention of English term itself also was not advisable. In making these new coinages, however, certain definite methods have been followed which are in keeping with the idiomatic genius of Hindi and other Indian languages. Some of them are mentioned here:

a) Compound Method

This already operates in Hindi in regard to both *Tatsama* and *Tadbhava* words and has proved invaluable in yielding a large number of scientific terms which are perfectly in keeping with the idiomatic genius of Hindi and have therefore been readily accepted by the language. The words commonly used are: धर्मी, धारी, मान, मूलक, निष्ठा, मापी, लेखी and दर्शी from which new compounds can be easily made from certain current basic words. This process of building new word families has been a highly fascinating aspect of our terminological work. A few examples are: 'रेडियम धर्मी' for 'radio-active'; 'वेतनमान' for 'salary scale', 'भूकम्पलेखी' for 'seismograph' etc.

b) Suffixal Method

This is purely grammatical and it consists of first fixing suitable Hindi suffixes for corresponding suffixes in the English terms, e.g., al, oid etc. and then using them to make derivative words from basic stems. A few examples of words coined according to this method are: 'संख्यात्मक' for 'numerical'; 'घनाभ' for 'cuboid' etc.

c) Prefixal Method

The same grammatical procedure is followed in this method also and suitable prefixes in Hindi are first fixed for corresponding English prefixes, and then the derivatives from basic words are made by the addition of these prefixes. Thus, we have made 'प्रतिपिंड' for 'antibody', 'अभिसारी' for 'convergent', 'अपसारी' for 'divergent' and so on.

This method has also been employed by us for building up new families of words from one basic word in coining new and precise equivalents for an associated group of terms. Thus, for 'resolution', 'proposal' and 'motion' only one term 'प्रस्ताव' was so far in current use. In order to eliminate this looseness of usage and to bring out the exact shade of meaning of each term, we have made 'संस्ताव' and 'उपस्ताव' respectively for 'resolution' and 'motion', reserving 'प्रस्ताव' exclusively for 'proposal' for which it is most widely used in modern Hindi.

d) Method of Grammatical Affinity

According to this method, new words have been coined on the basis of the root meanings of the original terms giving to these new words a recognisable grammatical

affinity with their parent words. Thus, 'आविसपत्र' for 'manifesto', 'अस्त्रविराम' for 'armistice', 'निवेष' for 'investment'.

e) Imaginative Method

This method has been adopted in case of words which in course of time have developed semantic connotations very widely removed from their etymological meanings. In such cases, we have resorted to a purely imaginative and creative process by which the new word evolved by us expresses the present connotation of the original word without reference to its structural form or literal meanings. Examples of such creations are: 'पक्षसार' for 'brief' (in the legal sense); 'मानसिक तोषण' for 'psycho-income' (in the economic sense): 'अपस ला' for 'zero hour' (in the military sense). These new equivalents are in most cases actually more representative of the concept involved than the original terms.

10) It is hoped, this elucidation of our methods and processes will arouse greater interest in these terminologies and will facilitate their adoption by the general public and by the various technical institutions and academic bodies. It is through constant use by the scientific writer and researcher that these new terms will acquire their full stature and develop the associations which serve to bridge the ever present gap between the idea as conceived and the word which expresses it. As these terminologies are gradually assimilated by all the languages of India, we can visualise the emergence of a common pan-Indian technical language which will serve as an easy and effective medium for the exchange of scientific and technological knowledge between the various linguistic areas of the country.

6.5.2 CSTT's Principles on Science Terms-1967

The preface of CSTT in 1967 gives an idea of the principles involved in preparing scientific terms. It also discusses the concept of "international terms". It reads as follows:

PRINCIPLES FOR EVOLUTION OF SCIENTIFIC AND TECHNICAL TERMINOLOGY APPROVED BY THE STANDING COMMISSION FOR SCIENTIFIC AND TECHNICAL TERMINOLOGY

'International terms' should be adopted in their current English forms, as far as possible and transliterated in Hindi and other Indian languages according to their genius. The following should be taken as examples of international terms:

a) Names of elements and compounds, e.g.—*Hydrogen, Carbon, Carbon dioxide,* etc.;

b) Units of weights, measures and physical quantities, e.g., *dyne, calorie, amperes,* etc.;

c) Terms based on proper names, e.g., *Fahrenheit scale (Fahrenheit), Voltmeter (Volta) Ampere (Ampere),* etc.;

d) Binomial nomenclature in such sciences as *Botany, Zoology, Geology,* etc;

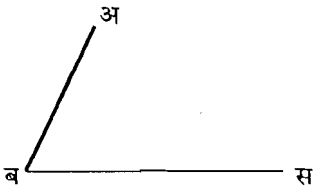
e) Constants, e.g., e, g, etc;

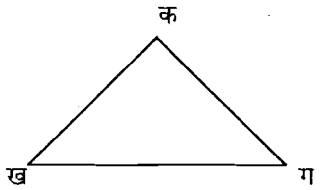
f) Words like *Radio, Petrol, Radar, Electron, Proton, Neutron* etc., which have gained practically world-wide usage;

g) Numerals, symbols, signs and formulae used in mathematics and other sciences e.g., *Sin, Cos, tan, log* etc. (Letters used in mathematical operation should be in Roman or Greek alphabets.)

2) The symbols will remain in the international form written in Roman script, but abbreviations may be written in Nagari and standardised form, specially for common weights and measures e.g., the symbol *'cm'* for centimetre will be used as such in Hindi, but the abbreviation in Nagari may be से॰मी॰. This will apply to books for children and other popular works only, but in standard works of science and technology, the international symbols only, like *cm.*, should be used.

3) Letters of Indian scripts may be used in geometrical figures e.g.





but only letters of Roman and Greek alphabets should be used in trigonometrical relations eg. *Sin A, Cos B* etc.

4) Conceptual terms have generally been translated.

5) In the selection of Hindi equivalents simplicity, precision of meaning and easy intelligibility should be borne in mind: Obscurantism and purism may be avoided.

6) The aim should be to achieve the maximum possible identity in all Indian languages by selecting terms:

a) common to as many of the regional languages as possible and

b) based on Sanskrit roots.

7) Indigenous terms, which have come into vogue in our languages for certain scientific words of common use such as तार for telegraph/telegram, महाद्वीप for continent, परमाणु for atom etc., will be retained.

8) Such loan words from English, Portuguese, French, etc., as have gained wide currency in Indian languages will be retained, e.g., *Engine, Machine, Lava, Meter, Litre, Prism, Torch* etc.

9) **Transliteration of International terms into Devanagari Script** – The transliteration of English terms should not be made so complex as to necessitate the introduction of new signs and symbols in the present Devanagari characters. The Devanagari rendering of English terms should aim at maximum approximation to the standard English pronunciation with such modification as prevalent amongst the educated circle in India.

10) **Gender** – The International terms adopted in Hindi should be used in the masculine gender, unless there were compelling reasons to the contrary.

11) **Hybrid-formation** – Hybrid forms in scientific terminologies e.g. आयनीकरण for ionization, वोल्टता for voltage, वलय-स्टैन्ड for ringstand, साबुनीकारक for saponifier etc. are normal and natural linguistic phenomena and that such forms may be adopted in practice keeping in view the requirements of the scientific terminology, viz., *simplicity, utility* and *precision*.

12) **Sandhi and Samasa in scientific terms** – Complex forms of Sandhi may be avoided and in cases of compound words, hyphen may be placed in between the two terms, because this would enable the users to have a more easy and quicker grasp of the word structure of the new terms. As regard आदिवृद्धि in Sanskrit-based words, it would be desirable to use आदिवृद्धि in prevalent Sanskrit *tatsama* words e.g., व्यावहारिक, लाक्षणिक etc. but may be avoided in newly coined words.

13) **Halanta** – Newly adopted terms should be correctly rendered with the use of 'hal' wherever necessary.

14) **Use of** पंचमवर्ण – The use of अनुस्वार may be preferred in place of पंचमवर्ण but in words like 'lens', 'patent', etc., the transliteration should be लैन्स, पेटेन्ट and not लेंस or पेटेंट.

6.5.3 CSTT's Principles on Humanities Terms-1973

The following extract from the foreword of the 'Comprehensive Glossary of Technical Terms – Humanities' by CSTT in the year 1973 explain the strategies involved in the

coining of technical terms.

i) In case of words of every-day use, we have included all the prevalent equivalents, e.g. for job नौकरी; कार्य, कृत्य, काम।

ii) for strictly technical terms, our preference has been for a precise but expressive equivalent, e.g. for 'opera', we have chosen सांकेतिक out of the current words गीतिनाट्य, संगीतक, सांगीत, संगीत नाटक and संगीतिका ।

iii) To suit the modern conceptual structure of Social Sciences, we have been constrained to follow the pattern of English in respect of those groups of terms which represent associated concepts. Consequently, we have resorted to an agreed fixation of a particular Indian word for an English term by consensus among the experts, e.g.:

aptitude	अभिक्षमता
interest	अभिरुचि
proneness	प्रवणता
tendency	प्रवृत्ति

As pointed out earlier, subjects like Economics, Philosophy, Literary Criticism, Theatre, Music, Linguistics and Architecture have an ancient tradition of technical terms which has come down to modern Indian languages without much alteration. Where a concept has been found to be amphibian in the subject traditions of East and West, the Indian term has been juxtaposed to the western term, e.g.:

costume	आहार्य	(Theatre)
indignation	अमर्ष	,,
episode	पताका	,,
answer	प्रतिहार	(Music)
balustrade	वदिका	(Architecture)
cornice	कपोत	,,
usury	कुसीद	(Economics)
articulator	कारण	(Linguistics)
ablation	अपादान	,,
pragmatism	अर्थक्रियावाद	(Philosophy)
contextualism	दृष्टिसृष्टिवाद	(Epistemology)

In certain cases, ancient Sanskrit terms have been suggested as contra-translations. This has been done particularly in case of terms relating to Literary Criticism. The classical Indian poetics is pretty advanced and commands a rich vocabulary. A number of Sanskrit books on Poetics have already been translated by eminent scholars – foreign and Indian – wherein Indian concepts have been rendered in English. The English expressions have, in course of time, acquired a standardised form. Famous English books on Indian poetics like those written by Max Muller, Keith, Peterson, Jacobi etc., are now regarded as standard works which students taking up higher studies in Hindi, Sanskrit etc. are expected to study. These standard works are now being taken up for translation under the book production programmes launched for facilitating the medium switch-over. The Commission, therefore, had to identify indigenous equivalents of such English terms used in these books. A few examples of these contra-translations are reproduced below:

absolute mistress	स्वाधीनपतिका
graceful manner	कैशिकी वृत्ति
noble hero	धीरोदात्त नायक, धीर नायक
consequents	अनुभाव

The Commission have assiduously aimed at simplicity. But at times, simplicity fell short of accuracy and impeded facility of compact derivation. In such cases, alternatives have been suggested, e.g., 'accept' can be translated as मानना but the derivatives therefrom like 'acceptance', 'acceptability', 'accepted' ran into constructional and semantic

difficulties. Therefore, स्वीकार करना had to be given as an alternative which facilitated compact terms like स्वीकृति , स्वीकार्यता, स्वीकृत etc. For the same reason, we have translated 'lapse' as व्यपगमन besides ..... बीत जाना .....

The mention of a subject with a term denotes the particular context which the Commission has kept in view while evolving the equivalent. The users are free to use these terms to express similar meanings in other subjects. As we all know, the subject-matter of Humanities and Social Sciences overlaps to such an extent that it is almost impossible to pinpoint as to which term belongs to which particular discipline. Economics and Commerce, History and Political Science, Psychology and Sociology are examples of closely related subjects where there is abundant interflow of concepts...

For the purposes of uniformity on an all-India basis, we have kept in view two important considerations which are contained in Article 351 of our Constitution. First, that 'new' terms have, as far as possible, been based on or derived from Sanskrit. Secondly, wherever possible, we have adopted words without any reservation from other modern Indian languages for extensive use in technical literature, e.g. :

blighted area	झोंपड़पट्टी	(Marathi)
elastic	लवचिक	,,
novella	नवलिका	(Gujarati)
amateur	औत्साहिक	(Telugu)
idiom	जातीयम्	,,
green room	साजगृह	(Bengali)
impersonation	रूपारोप	,,
bond labour	गोती	(Oriya)
minor coin	चिल्लर	(Malayalam, Tamil)

These terms have been suggested mostly by experts belonging to the concerned areas. Wherever necessary, we have also mentioned in brackets the language from which the word or expression has been taken.

Certain inevitability has been faced by our language in respect of translations of some technical terms. The Commission have mostly been translating concepts; but some Western concepts, as embodied in English technical terms, have attained such a world-wide currency that they had to be reckoned as such and translated literally. This is evident from the following examples:

above the line	रेखोपरि
Middle East	मध्य-पूर्व
leftist	वामपंथी
rightist	दक्षिणपंथी
bias relation	अभिनति संबंध
fifth columnist	पंचमांगी

Literal translation has, however, been restricted to a few expressions only; otherwise we have taken care to translate the sense into pithy Indian equivalents. Examples of such conceptual translations are:

grub street writing	मसिजीवी लेखन	(Literary Criticism)
amorous bite	विषकन्या-दंश	(Folklore)
spearhead money	आधिपत्य मुद्रा	(Economics)
utility	तुष्टिगुण	,,
bandwagon effect	अनुरूपता प्रभाव	(Psychology)
conversational piece	समूह चित्र	(Fine Arts)
atomic language	मूलज भाषा	(Linguistics)
philosophical anthropology	मानवमीमांसा	(Philosophy)

As we all know, during the Mughal period, our languages assimilated a great deal of Perso-Arabic words. During the reign of Akbar and thereafter, socio-linguistic fusion reached a new peak so much so that the borrowings are no longer distinguishable. The Perso-Arabic words of Administration and Law are discernible right from Kashmir to down South. In the North, as a result of this fusion, there emerged a style which is popularly known as 'Hindustani'. Article 351 of the Constitution has, therefore, rightly acknowledged the role of 'Hindustani' in the development of Hindi in the days to come. The Perso-Arabic vocabulary has been current in India in subjects like General Administration, Revenue Administration, Architecture, Politics, Military Science and Commerce etc. as is evident from the following illustrations:

Hindi	जब्ती (forfeiture), शिनाख्त (identification), मुआवजा (compensation)
Marathi	बड़तर्फ (dismissal), असर (effect), कलम (section)
Gujarati	नातरफदारी (neutrality), खपतदार (consumer)
Malayalam	तहसीलदार (tehsildar), जमाबंदी (land records)

Our Expert Committees, keeping the developing Indian linguistic scene in view, have fixed a number of such words as technical terms, e.g.:

substitute	एवज़ी	(General Administration)
investigation	तफतीश	(„)
document	दस्तावेज़	(„)
excise	आबकारी	(Revenue Administration)
tenant	काश्तकार	(„)
advance	पेशगी	(Commerce)
day book	रोज़नामचा	(„)
awning	सायबान	(Architecture)
arch	मेहराब	(„)
flanking movement	तुलुगमा	(Military Science)
spear	नेजा	(„)

Exercise II

Q.1: Describe the four different approaches to developing technical terms in about five sentences each.

i) Revivalistic approach

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ii) The approach of adopting words

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iii) The indigenous approach

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iv) The eclectic approach

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v) Which are the agencies in-charge of coining technical terms in Hindi. Describe their functions in about ten sentences.

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Q.2: What are the basic principles of coining technical terms enunciated by CSTT? Write in ten sentences.

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6.6 LET US SUM UP

In this Unit, we have discussed:

- that words have meanings which are denotative as well as connotative;
- that technical terms are conceptual terms. They define the meaning of the word in a particular context in a specific field of knowledge in a clear, unambiguous way.
- some of the approaches of developing technical terms. These are the revivalistic approach, the approach of adopting words, the indigenous approach and the eclectic approach;
- some major statements regarding development of technical terms in Hindi such as the CHD statement (1962); CSTT's principles on science terms (1967) and CSTT's principles on humanities terms (1973).
- how technical terms are required in the translation of texts from humanities, sciences and social sciences.

6.7 SUGGESTED READING

You may find the following books useful:

A Consolidated Glossary of Technical Terms, New Delhi: Central Hindi Directorate

भोलानाथ, तिवारी, महेन्द्र चतुर्वेदी, *पारिभाषिक शब्दावली :* कुछ समस्याएं, दिल्ली : शब्दाकार प्रकाशन

गार्गी गुप्त (सं), *पारिभाषिक शब्दावली की विकास* यात्रा, दिल्ली : भारतीय अनुवाद परिषद्

भारत भूषण, *बैंकिंग शब्दावली : हिंदी-अंग्रेज़ी-हिंदी,* आगरा : केन्द्रीय हिंदी संस्थान

6.8 ANSWERS TO EXERCISES

Exercise I

1) i) Vermillion; the symbol of a fortunate woman i.e. a married woman in Hindu culture
   ii) sacred thread; especially worn by brahmins;
   iii) yellow rice used in prayer and offering.
2) Refer to Section 6.1.
3) Refer to Section 6.2.
4) Refer to Section 6.2.
5) Refer to Section 6.3.
6) Refer to Section 6.3.
7)

संसद	(राजनीति)	छायावाद	(साहित्य)
अद्वैत	(दर्शन)	संवेग	(मनोविज्ञान)
स्तनपायी	(जीवविज्ञान)	मुद्रास्फीति	(अर्थशास्त्र)
सामंतवादी	(राजनीति)	ऊर्जा	(विज्ञान)
तापमान	(भौतिक विज्ञान)	सांप्रदायिक	(राजनीति)
क्रोमियम	(विज्ञान)		

Exercise II

1) Refer to Sub-sections 6.4.1, 6.4.2, 6.4.3, and 6.4.4.
2) Refer to Sub-sections 6.5.1 and 6.5.2.
3) Refer to Sub-section 6.5.2.