தமிழ் இணைப்புப் பயிற்சி

(TAMIL BRIDGE COURSE)

மாணவர் தொகுதி - 5

(ஆங்கிலப் பகுதியைத் தமிழில் சுருக்கி வரைதல்)

CIIL BRIDGE COURSE SERIES—3

TAMIL BRIDGE COURSE

(A HUNDRED-HOUR COURSE FOR COLLEGE ENTRANTS)

Central Institute of Indian Languages
Mysore

IN COLLABORATION WITH

International Institute of Tamil Studies
Madras

AND

Directorate of Collegiate Education
Madras

First Published

Copies : 750

Printed at : Oppuravu Achagam, Madras-600 018

Published at the Central Institute of Indian Languages, Manasagangothri, Mysore by D. P. Pattanayak, Director, (CIIL)

TAMIL BRIDGE COURSE

(A Hundred-Hour Course for College Entrants)

STUDENTS' VOLUME

(Epitomizing An English Passage into Tamil)

Consultants

D. P. Pattanayak (*Director, CIIL*)
K. Mohanarangam (*Director, DCE*)
S. V. Subramanian (*Director, IITS*)
M. S. Thirumalai (*Deputy Director & Project Officer CIIL*)

Resource Personnel & Co-ordinators

V. Gnanasundaram (*CIIL*)
S. V. Varada Bhattachariya (*CIIL*)

Compiled with Exercises and Notes by

R. Perialwar
M. Shanmugham

Central Institute of Indian Languages
Mysore

In Collaboration with

International Institute of Tamil Studies
Madras

and

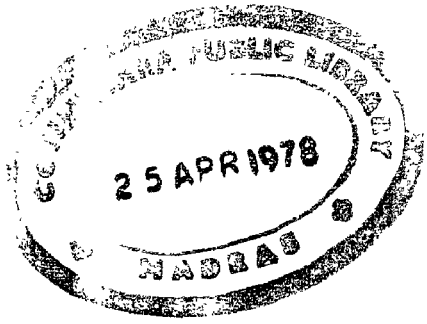
Directorate of Collegiate Education
Madras

தமிழ் இணைப்புப் பயிற்சி

(கல்லூரியில் பயில இருக்கும் மாணவர்களுக்கு 100 மணி நேரப் பயிற்சி)

மாணவர் தொகுதி - 5

(ஆங்கிலப் பகுதியைத் தமிழில் சுருக்கி வரைதல்)



ஆலோசகர்கள்

டி. பி. பட்டநாயக், இயக்குநர் *(CIIL)*
கு. மோகனரங்கம், இயக்குநர் *(DCE)*
ச. வே. சுப்பிரமணியன், இயக்குநர் *(IITS)*
மா. சு. திருமலை, துணை இயக்குநர் *(CIIL)*

உருவாக்கியவர்கள்

ஆர். பெரியாழ்வார்
மு. சண்முகம்

ஆய்வுரையாளர்கள்

வ. ஞானசுந்தரம், *(CIIL)*
எஸ். வி. வரதபட்டாச்சார்யா, *(CIIL)*

இந்திய மொழிகளின் நடுவண் நிறுவனம்
மைசூர் 570 006

உலகத் தமிழாராய்ச்சி நிறுவனம்
சென்னை 600 020

கல்லூரிக் கல்வி இயக்ககம்
சென்னை 600 006

FOREWORD

The Central Institute of Indian Languages was set up on the 17th July, 1969, with a view to assisting and coordinating the development of Indian Languages. The Institute was charged with the responsibility of serving as a nucleus to bring together all the research and literary output from the various linguistic streams to a common head and narrowing the gap between basic research and developmental research in the field of languages and linguistics in India.

The Institute and its five Regional Language Centres are thus engaged in research and teaching which leads to the publication of a wide-ranging variety of materials. Materials designed for teaching/learning at different levels and suited to specific needs is one of the major areas of interest in its series of publications. Basic research relating to the acquisition of language and study of language in its manifold psychosocial relations constitute another broad range of its interest. These materials will include materials produced by the members of the staff of the Central Institute of Indian Languages and its Regional Language Centres and associated scholars from Universities and Institutions, both Indian and foreign.

Two psycholinguistic experiments conducted by the CIIL in Kannada and Malayalam to test (a) whether there is a gap between the language achievement at the end of the school stage and the language requirement at the beginning of the college entrance stage, particularly when the mother-tongue is the medium of instruction at both the stages; (b) whether the gap can be mapped in terms of language skills; (c) whether skills can be hierarchically related and (d) whether the proper input and scientifically controlled process can enhance learning with economy and efficiency yield a 100-hour bridge course.

The experiment demonstrated that the lack of objective and direction in teaching mother-tongue, the emphasis on teaching of literature, particularly ancient and medieval literature, and total negligence of conceptual prose result in a situation at the end of the school stage which leaves a distinct gap to be bridged if the student is to use his mother-tongue as medium at the college stage. It was also found that a Bridge Course of the type devised by the CIIL which is need-oriented and skill-based is an effective tool to bridge the gulf.

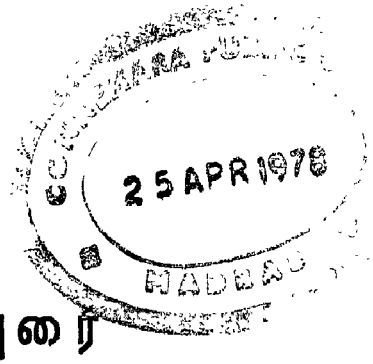
Realising the need for and importance of the Bridge Course devised by the CIIL, the Association of Indian Universities has recommended to its members the adoption of the CIIL-Bridge Course in all the Indian Languages.

It is gratifying that the International Institute of Tamil Studies, Madras has taken initiative in preparing the Tamil Bridge Course in collaboration with the Institute. The participation of members of the International Institute of Tamil Studies and Officials of the Directorate of Collegiate Education in the administration of the Bridge Course has facilitated our work. This is an excellent example of technology transfer from the Institute and collaboration between the central and State Government agencies.

If the students studying through the Tamil medium find it rewarding I will consider the project a success.

Central Institute of Indian Languages.
Manasagangotri, Mysore-570 006
26th April, 1977

D. P. PATTANAYAK
Director



முகவுரை

கல்வி மாணவர்களிடையே சிறந்தோங்க வேண்டுமானால் தாய்மொழி மூலம் பயிற்றுவிக்கவேண்டும். மாணவர்களுக்கும் ஆசிரியர்களுக்கும் இடையே கல்விக்கான செய்திப் பரிமாற்றம் நிகழவும், ஆட்சி செலுத்துபவர்களும் பொதுமக்களும் ஒருங்கிணைந்து செயல்படவும் கல்விப் பயிற்சி தாய்மொழி மூலம் அமைதல் வேண்டும். தாய்மொழி மூலம் கல்வி பயிற்றுவிப்பது உலக நாடுகள் பலவற்றில் காணக் கூடிய ஒன்று. நம் நாட்டிலும் கொள்கையளவில் இதை ஏற்றுக்கொண்டு வருடங்கள் பலவாகிவிட்டன. கல்லூரிகளில் பாடங்களைத் தாய்மொழி மூலம் பயிற்றுவிக்கவேண்டும் என்ற கோரிக்கை நெடுங்காலமாகப் பல அறிஞர்களிடையே இருந்து வந்து கொண்டிருந்தது. 1957இல் தமிழ்நாட்டில் தமிழைக் கல்லூரிக் கல்வி மொழியாக ஆக்கினர். குறிப்பிட்ட சில கல்லூரிகளில் பி.ஏ. வகுப்பு மாணவர்கள் தங்கள் பாடங்கள் அனைத்தையும் தமிழிலேயே கற்று வந்தனர். 1968ஆம் ஆண்டுத் தொடக்கத்தில் புகுமுக வகுப்பிலும், 1969ஆம் ஆண்டிலிருந்து பட்டப் படிப்பு வகுப்பிலும் அறிவியல் பாடங்களையும் தமிழிலேயே கற்பிக்க அரசினர் ஏற்பாடு செய்தனர்.

உயர்நிலைப் பள்ளிகளில் தமிழ்ப் பாட நூல்களின் பாடங்கள் பல்வேறு கால இலக்கியங்களை மையமாகக்கொண்டு அமைந்துள்ளது. உயர்நிலைப் பள்ளிக் கல்வி ஏறக்குறைய இலக்கியத்தைக் கற்கும் கல்வியாகவே அமைந்துவிடுகிறது. ஆனால், மாணவர்கள் கல்லூரியில் தாய்மொழி மூலம் பாடங்களைக் கற்கும்போது பௌதிகம், நிலப்பொதிவியல், தாவரவியல் போன்ற அறிவியல் பாடங்களையும் (Science Subjects)பொருளியல், வாணிகவியல், சமூகவியல் போன்ற கலைப் பாடங்களையும் (Humanities Subjects) கற்கும்போது இடர்ப்படுகின்றனர். பள்ளிகளில் உள்ள மொழிக்கல்வி குறித்த பாடத் திட்டம் (Syllabus) கல்லூரிப் பயிற்சியின்போது உள்ள மொழித்திறன்களை மனத்தில் கொள்ளாது அமைந்திருப்பதால் இடர்ப்பாடு நேர்கிறது என்பதைத் தாய்மொழிப் பாடத் திட்டம் குறித்துப் பல இந்திய மொழிகளில் இந்திய மொழிகளின் நடுவண் நிறுவனம் நடத்திய ஆய்வுகள் (Surveys) தெளிவாகப் புலப்படுத்துகின்றன. இந்த இடர்ப்பாட்டைப் போக்குவதற்காக உலகத் தமிழாராய்ச்சி நிறுவனம், கல்லூரிக் கல்வி இயக்ககம் ஆகிய இவைகளின் உறுதுணையுடன் இந்திய மொழிகளின் நடுவண் நிறுவனம் 100 மணி நேரத் தமிழ் இணைப்புப் பயிற்சி ஒன்றை உருவாக்கியுள்ளது.

கல்லூரிப் புகுமுக வகுப்பில் மாணவர்கள் அடையவேண்டிய மொழித் திறன்களையும் மாணவர்கள் கற்கவேண்டிய பாடத் துறைகளின் தொகுதிகளையும் மனத்தில்கொண்டு முன்பு குறிப்பிட்ட இடர்ப்பாடு நீங்கும் வண்ணம் மாணவர்களுக்குக் கொடுக்கின்ற ஒரு பயிற்சிதான் இணைப்புப் பயிற்சியாகும். இந்தியப் பல்கலைக் கழகங்களின் சங்கம், இப் பயிற்சியின் அவசியத்தை உணர்ந்து எல்லா இந்திய மொழிகளிலும் இப்பயிற்சியை மேற்கொள்ளலாம் என்ற பரிந்துரைரையை வழங்கியுள்ளது.

விரிவுரையைக் கேட்டுணர்தல், கேட்டுக் குறிப்பெடுத்தல், படித்துணர்தல், குறிப்புகள் கொண்டு கட்டுரை எழுதுதல், ஆங்கிலப் பகுதியைத் தமிழில் சுருக்கி வரைதல் போன்ற மொழித்திறன்களே இவ்வினைப்புப் பயிற்சியின் இலக்குகள் (ojectives).

முதன்முதலில் இணைப்புப் பயிற்சி கன்னட மொழிக்கு உருவாக்கப்பட்டது. கர்நாடக மாநிலத்தில் 1970—71இல் பயிற்சி நடத்தப்பட்டுச் சோதனை செய்து பார்க்கப்பட்டது. பின்னர் 1976இல் மலையாள மொழிக்கு ஒரு இணைப்புப் பயிற்சி உருவாக்கப்பட்டு, கேரளத்தில் பயிற்சி நடத்தப்பட்டுச் சோதனைச் செய்து பார்க்கப்பட்டது. இந்த இரண்டு இணைப்புப் பயிற்சிச் சோதனைகளின் முடிவுகளும் பயிற்சியின் முடிவில் மாணவர்கள் அடையவேண்டிய மொழித் திறன்களை அடைந்தமையைப் புலப்படுத்தின. இந்த முடிவுகள் அளித்த ஊக்கத்தாலும், தமிழுக்கும் ஒரு இணைப்புப் பயிற்சி தேவை என்பதை உணர்ந்ததாலும் இந்திய மொழிகளின் நடுவண் நிறுவனம் தமிழுக்கு ஒரு இணைப்புப் பயிற்சியை உருவாக்க முனைந்தது. இந்த முயற்சிக்கு உறுதுணையாக இருந்த உலகத் தமிழாராய்ச்சி நிறுவனத்திற்கும் அதன் இயக்குநர் டாக்டர் ச. வே. சுப்பிரமணியன் அவர்களுக்கும் கல்லூரிக் கல்வி இயக்ககத்திற்கும் அதன் இயக்குநர் திரு. கு. மோகனரங்கம், துணை இயக்குநர் திரு. கு. ஆளுடைய பிள்ளை இணை இயக்குநர் திருமதி ஸ்டெல்லா சௌந்தரராஜ் ஆகியோர்க்கும் நாங்கள் நன்றி பாராட்டக் கடமைப்பட்டுள்ளோம்.

தமிழ் இணைப்புப் பயிற்சியை உருவாக்குவதற்கான வடிவத்தை அமைத்து, இத்திட்டத்தின் ஒவ்வொரு கட்டத்திலும் ஆலோசனைகள் நல்கி எங்களை ஊக்குவித்த இந்திய மொழிகளின் நடுவண் நிறுவனத்தின் இயக்குநர் டாக்டர் டி. பி. பட்டநாயக் அவர்களுக்கும், துணை இயக்குநர் டாக்டர் மா. சு. திருமலை அவர்களுக்கும், எங்கள் உளங்கனிந்த நன்றியைத் தெரிவித்துக்கொள்கிறோம்.

இவ்வினைப்புப் பயிற்சி நூல்களை உருவாக்கும் ஒவ்வொரு கட்டத்திலும் ஆக்கப் பூர்வமான யோசனைகளை நல்கிய டாக்டர் வ. ஞானசுந்தரம், திரு. எஸ். வி. வி. வரதபட்டாச் சார்யா ஆகியோர்களுக்கும், தங்கள் கட்டுரைகளை இப்பயிற்சித் தொகுதிகளில் பாடங்களாக அமைத்துக் கொள்வதற்கு அன்போடு அனுமதி வழங்கிய ஆசிரியர்களுக்கும் எங்கள் நன்றியைத் தெரிவித்துக் கொள்கிறோம்.

தமிழ் இணைப்புப் பயிற்சி நூற்றொகுதிகளைத் திறனாய்ந்து நிறைகுறைகளைத் தெரிவித்து இப்பயிற்சி நூல்களின் குறைகளைப் போக்க உதவிய சென்னைப் பல்கலைக் கழகத் தமிழ்த்துறை இளநிலைப் பேராசிரியர் (Reader) டாக்டர். பொன். கோதண்டராமன் அவர்களுக்கும், சென்னைப் பல்கலைக் கழகக் கல்வித்துறை இளநிலைப் பேராசிரியர் டாக்டர் எம். ஆர். சந்தானம் அவர்களுக்கும் எங்கள் நன்றியைத் தெரிவித்துக் கொள்கிறோம்.

முன்னோடித் தேர்வு (Validation test) நடத்துவதற்கு உதவிகள் நல்கிய

1. நந்தனம் கலைக் கல்லூரி முதல்வர்க்கும்
2. பச்சையப்பர் கலைக் கல்லூரி முதல்வர்க்கும்
3. இராணிமேரி மகளிர் கல்லூரி முதல்வர்க்கும்
4. செல்லம்மாள் மகளிர் கல்லூரி முதல்வர்க்கும்

5. மாநிலப் பெண்கள் உயர்நிலைப்பள்ளித் தலைமையாசிரியர்க்கும்

6. லேடி சிவசாமி அய்யர் பெண்கள் உயர்நிலைப்பள்ளித் தலைமையாசிரியர்க்கும்

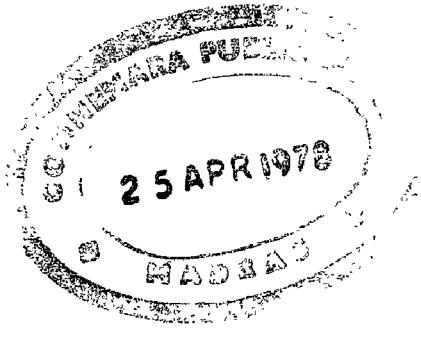
7. சைதாப்பேட்டை மாநகராட்சி உயர்நிலைப்பள்ளித் தலைமையாசிரியர்க்கும்

8. எம். சி. டி. உயர்நிலைப்பள்ளித் தலைமையாசிரியர்க்கும்

நாங்கள் நன்றிகூறக் கடமைப்பட்டுள்ளோம்.

தமிழ் இணைப்புப் பயிற்சிக்குரிய பாடங்களைப் பல்வேறு தமிழ் இதழ்களிலிருந்து (Tamil Journals) தேர்ந்தெடுக்க முயற்சி செய்தபோது, அவ்விதழ்களைப் பார்வையிட அன்போடு அனுமதி வழங்கிய சென்னைப் பல்கலைக் கழக நூலகர், கன்னிமாராப் பல்கலைக் கழக நூலகர், மறைமலையடிகள் நூலகத்தின் நூலகர் ஆகியோர்க்கும் நன்றி கூறுகிறோம்.

தமிழ் இணைப்புப் பயிற்சி நூல்களின் அச்சுப்படிகளைத் திருத்தி உதவிய உலகத் தமிழாராய்ச்சி நிறுவன ஆய்வாளர்கள் திரு. கே. மதியழகனுக்கும், திரு. ந. அறிவழகனுக்கும் நாங்கள் நன்றி தெரிவிக்கிறோம்.



ஆர். பெரியாழ்வார்

மு. சண்முகம்

CONTENT

குறிப்புகள்

1. கொடுக்கப்பட்டுள்ள ஆங்கிலப் பகுதியைக் கவனமாகப் படிக்கவும். படித்தபின் முதலில் திருந்தா வடிவத்தில் (Rough draft) கட்டுரையை எழுதுவதற்காகக் கொடுக்கப்பட்டுள்ள இடத்தில், படித்த பகுதியின் சுருக்கத்தைத் தமிழில் எழுதவும். பிறகு, திருந்திய வடிவில் (Fair draft) எழுதவும்.

2. சுருக்கி வரையும்போது ஆங்கிலத்தில் உள்ள முக்கியச் செய்திகள் எதுவும் விடுபடாமல் பார்த்துக் கொள்ளவும்.

3. ஆங்கிலப் பகுதியில் உள்ள இறந்த கால, நிகழ் கால, எதிர் கால வினைகள் தமிழ்க் கட்டுரையில் அமையும்போது அந்த வினைகளின் காலங்கள் மாறுமல் பார்த்துக்கொள்ளவும்.

4. கடினமான ஆங்கிலச் சொற்களுக்குத் தமிழில் பொருள் தரப் பட்டுள்ளது.

5. கொடுக்கப்பட்டுள்ள பகுதியை மூன்றில் ஒரு பங்காகக் குறைத்து எழுதவும். (உ-ம்) ஆங்கிலப் பகுதியில் 441 சொற்கள் இருந்தால் அதைத் தமிழில் 147 சொற்கள் உள்ள கட்டுரையாக அமைக்கவும்.

6. பத்தி ஆரம்பத்தைக் குறிப்பதற்காக '//' இக்குறியீட்டைப் பயன் படுத்தவும்.

7. திருந்தா வடிவத்திலும், திருந்திய வடிவத்திலும் கட்டுரையை எழுதுவதற்குக் கொடுக்கப்பட்டுள்ள கட்டங்களைப் பயன்படுத்தவும். ஒரு கட்டத்தில் ஒரு சொல் மட்டும் எழுதவும்.

8. இதில் ஒவ்வொரு பகுதிக்கும் ஒருமணி நேரம் ஒதுக்கப்பட்டுள்ளது.

1. TREES

TREES are of importance not only to man but to birds and animals as well. The branches of trees give shelter to millions and millions of birds; and forests give shelter to numerous wild animals.

We value trees not only for their usefulness but also for their beauty. They have a way of refreshing the eyes and also refreshing the mind. Perhaps that was why the rishis of olden days were drawn to the forests, and they and their pupils chose to live in forest homes in the company of nature. In modern times, when Rabindranath Tagore started a school, he too chose a place full of trees and called it Shantiniketan or the Home of Peace.

Once upon a time large areas of India were covered with forests full of numerous kinds of trees. As the population grew, trees began to be cut down for man's use. That is how the wonderful forests described in our ancient poems came to be destroyed. and a great part of our forest wealth was lost. Now we are trying to replace this loss and our Government wants trees to be planted all over the country. A new festival has been started for this purpose; it is called Vanamhotsava or the Forest Festival. Since trees are the country's wealth, we must consider it our sacred duty do protect them. We should plant new trees wherever we can and look after them well.

Perhaps you would like to be told some interesting facts about trees. Are trees living things? Since trees do not move about or make cries as animals do, they don't seem to us to be living, but the fact is that they are quite as much living as any other creature. They 'eat', 'drink' and 'breathe' as animals do. Trees also 'sleep' at night as we do; you must have seen how some trees, in fact, fold their leaves at night and seem to go to sleep.

Do trees and plants have feeling?

"And 'tis my faith that every flower
Enjoys the air it breathes,"

wrote the English poet, Wordsworth. Some plants such as the touch-me-not fold their leaves when we touch them and seem to draw back from us. The Indian scientist,

J. C. Bose, is said to have proved that trees and plants feel pleasure and pain as we do, but this is not quite certain.

Some trees grow very tall. The eucalyptus trees of Australia and the redwood trees of California have been known to grow up to a eght of about 350 feet. That means that they are as tall as three or four Palmyra trees placed one on top of another. There are trees which grow huge in size. Some redwood trees in California are so huge that roads have been cut through them! In Mexico, there is a tree which is 160 feet round the trunk. That is, it takes up an area large enough to hold five or six class-rooms!

Trees are the most long-lived creatures on the earth. The sacred Bo tree at Anduradhapura in Ceylon is as old as Asoka's pillars. It was planted by Asoka's sister, who went to Ceylon to teach the religion of the Buddha. The giant sequoia trees of California are over 3,000 years old. Some of them are believed to be even 5,000 years old! They must already have lived for many centuries when the Aryans came to India.

(Word count : 630)

Numerous : எண்ணற்ற

Refresh : புதிதாக்கு, புத்துயிர்கொடு

Destroy : அழி

Replace : சுடுசெய்

Fold : மடிப்பு

Palmyra : பனை

ROUGH DRAFT

FAIR DRAFT

					5
					10
					15
					20
					25
					30
					35
					40
					45
					50
					55
					60
					65
					70
					75
					80
					85
					90
					95
					100

					105
					110
					115
					120
					125
					130
					135
					140
					145
					150
					155
					160
					165
					170
					175
					180
					185
					190
					195
					200

					205
					210
					215
					220
					225
					230
					235
					240
					245
					250
					255
					260
					265
					270
					275
					280
					285
					290
					295
					300

2. THE LIFE OF MAN IN SOME NATURAL REGIONS

The distribution of population and the level of economic development of an area depend on the interaction between man and his environment. Earlier it was thought that environment was the dominant factor and that human activities were controlled by the natural environment. It was argued that similar natural environment in different parts of the world was bound to produce similar, if not identical, human response. Man's activities were thought to be governed by the constraints imposed by the environment.

With the developments in science and technology, it came to be realised that the limitations imposed by natural environment could be overcame, for example, the air conditioning of buildings has enabled man to live and work comfortably in any climatic region. The areas of scanty rainfall are now irrigated by canals fed from large reservoirs which are built elsewhere. Glass-houses enable man to cultivate vegetables even in the polar regions. The use of mechanical power from coal, oil and electricity has enabled man to develop the local or imported resources in an area.

Though man is able to overcome the limitations of the environment to a considerable extent, such activities involve considerable costs. For example, marginal lands could be cultivated by the application of fertilisers to the soil and by irrigation. But the cost factor sets limit to the area that could be developed. Economic factors become an important consideration in establishing the relationship between man and his environment in any area. For example, the forest resources of the equatorial region remain undeveloped because of the huge costs involved. The world's requirements of forest products, such as wood pulp, paper and newsprint are now met from coniferous forests whose exploitation involves limited costs. Therefore, man cannot completely overcome the limitations imposed by the environment in view of the high costs involved in doing so.

While the natural environment offers a number of possibilities, man chooses the most suitable one for his mode of life. Thus the same environment may give rise to different human responses depending on the types of people living in different areas. Though man is physiologically the same everywhere, his needs and aspirations are different depending upon the social and cultural values and the economic and other factors. As you know, the level of development of an area depends on the people who live there. If man understands the relationships between different elements of the natural evironment, he will be able to live in harmony with the environment and develop the resources to his own maximum advantage. (Word count : 418)

Man and Environment : by Courtesy, NCERT

dominant	:	ஆதிக்கமுள்ள, முனைப்புள்ள
woodpulp	:	மரக்கூழ்
newsprint	:	செய்தித்தாள் அச்சடிக்கும் காகிதம்
aspirations	:	விருப்பங்கள்
harmony	:	இசைவு, இயக்கம்
Population	:	மக்கள் தொகை
environment	:	சூழ்நிலை
impose	:	திணி
govern	:	ஆள்
Polar regions	:	தூந்திரப்பகுதிகள்
reservoirs	:	குளங்கள், ஏரிகள்
mechanical power	:	இயந்திர சக்தி
fertilisers	:	உரங்கள்
equatorial regions	:	பூமத்தியரேகைப் பகுதிகள்
exploitation	:	பயன்படுத்துதல்
physiology	:	உடலியல்
harmony	:	இணக்கம்

ROUGH DRAFT

FAIR DRAFT

					5
					10
					15
					20
					25
					30
					35
					40
					45
					50
					55
					60
					65
					70
					75
					80
					85
					90
					95
					100

					105
					110
					115
					120
					125
					130
					135
					140
					145
					150
					155
					160
					165
					170
					175
					180
					185
					190
					195
					200

3. WATER AND LIFE ON EARTH

Of all the countless substances which exist on Earth, water is probably the most important. In fact the lives of both animals and plants depend on it.

One reason why water is essential to life is that animals and plants are mostly made of water. This is seen easily enough in, say, a jellyfish which is nine-tenths water. Less obvious, though equally important, is the water which makes up about three-quarters of the human body.

Animals are able to take in water by drinking. The heart, a muscular organ, is able to pump blood (which is mostly water) to all parts of the body through the blood vessels. Because water loses and gains heat so slowly (slower than any other liquid) the blood can transport heat from one part of the body to another. Also, because the body contains so much water its temperature will not be subject to rapid ups and downs. For this reason the vital chemical reactions going on inside the body are neither slowed down nor accelarated to any great extent.

Unlike an animal, a plant cannot, of its own accord, move to find water. It manages to take up water from the soil through its roots which are covered with tiny hairs. The concentration of substances (e.g.salts) dissolved in water in the root hairs is greater than the concentration of dissolved substances in the soil. Because of this difference in concentration between the inside and outside of the plant, water will pass from the soil into the root hairs. This process is called osmosis.

The leaves of a plant are rich in sugar. As water is evaporated from the outer parts of the leaf by the heat of the sun, the sap in the cells there becomes more concentrated. So water is drawn into them, by osmosis, from the inner, neighbouring cells to replace that lost by evaporation. This process spreads from cell to cell back to the stem itself, so that water is drawn from the stem into the leaf.

Since water tends to stick together in a narrow tube, the whole column of water in the stem is pulled upwards; the action is rather like drinking through a straw. Water is pulled upwards to a height of over 200 feet in this way by the sequoia tree. It is replenished by more water entering the roots.

Undevstanding Science 1 by Courtesy by I B H Publishing House.

Water helps to give shape to the parts of a plant blowing them out just as air does in a football bladder when plants become short of water, as on a hot summer's day, they become limp and wilt.

But the Prime importance of water to a plant is in its foodmaking process, using the energy of sunlight a plant builds up complicated foods, such as sugar from water and carbon - dioxide.

All of the chemical reactions in a plant or an animal take place in a watery solution the chemicals themselves are dissolved in water. For example, the digestion of food in the gut of an animal takes place in a solution which is largely water, and the digested food passes in solution through the wall of the gut to the fat-collecting vessels and the blood vessels. Solid food could not do this. Blood itself is a watery fluid. If the chemicals in the blood were not in solution the blood vessels would become clogged with soilds and the flow of blood would be impossible. Similarly, food substances and minerals could not move about in a plant if they were not in solution.

The various roles of water in the living things depend on its ability to dissolve substancess and its ability to flow.

Water can dissolve most things. This is because it reduces the electrical forces which hold together the particles which from solid substances. Streams and rivers dissolve mineral salts from the rocks over which they pass and carry these salts to the sea. When water evaporates from the surface of the sea the mineral salts are left behind. The evaporated water may eventually fall on the land again as rain, find its way to the nearest river and dissolve more salts on its way to the sea. This process has been going on ever since the first drop of rain fell on the Earth. Gradually the amount of mineral salts in the sea has increased until there is now, on average, 3½ pounds of salt in every 100 pounds of sea-water.

Under normal circumstances, water is a liquid, and like all liquids it can flow, Rainwater gathers in streams and rivers, flowing downhill under the force of gravity. Water draining off the land masses for millions of years has gathered in deep hollows in the Earth's crust to form the oceans.

Being a liquid, water has no shape of its own. At a certain temperature, however, water freezes and turns into ice-a solid. If ice is heated it melts to form water once again; the temperature at which this happens is defined as 0 Centigrade or 32 Fahrenheit. As water turns into ice it expands. Water molecules (the smallest possible pieces of water) are normally jumbled together higgledy - piggledly, but upon freezing they arrange themselves in a definite pattern (called a crystal lattice). In doing so they take up more room, or, in other words, the water expands. If water seeps into a crack in a rock and freezes, its expansion can crack the rock wide open. In a similar way, water freezing in a pipe can split it apart, for the force of expansion is tremendous.

At a temperature defined as 100° Centigrade or 212 Fahrenheit water boils and turns into steam-a gas. The molecules in water are attracted to each other by forces and so can not move independently. As the water is heated the molecules move more and more vigorously until at last they overcome the forces of attraction and fly about freely as gas molecules. When water changes to steam its volume increases about 1,700 times because its molecules become so widely spaced. This is why the lid of a kettle rises when the water inside is repidly being turned into steam. The same principle is used in the steam engine.

Just as water can be changed into steam by heating it, so steam can be changed back into water by cooling it. Water readily dissolves so many different substances that it almost always contains impurities. But the impurities do not change into steam when the water is boiled. This means that pure water can be obtained by leadiag steam away from the boiler, then cooling and 'condensing' it to give 'distilled' water.

(Word count - 1086)

muscular organ	:	தசை உறுப்பு
tiny	:	சிறிய
concentration	:	அடர்த்தியாக்குதல்
evaporation	:	ஆவியாகுதல்
replenished	:	நிரப்பு
mineral	:	கனிவள
define	:	இலக்கணம் கூறு, வரைந்து பொருள் கூறு
substances	:	பொருள்கள்
freezing	:	உறைதல்
difinite pattern	:	குறிப்பிட்ட மாதிரி, குறிப்பிட்ட படிவம்
impurities	:	தூய்மையற்றவைகள்
distilled	:	(வாலையில் வடித்த) காய்ச்சி வடிகட்டிய
condensing	:	சுருக்கிய

ROUGH DRAFT

FAIR DRAFT

					5
					10
					15
					20
					25
					30
					35
					40
					45
					50
					55
					60
					65
					70
					75
					80
					85
					90
					95
					100

					105
					110
					115
					120
					125
					130
					135
					140
					145
					150
					155
					160
					165
					170
					175
					180
					185
					190
					195
					200

					205
					210
					215
					220
					225
					230
					235
					240
					245
					250
					255
					260
					265
					270
					275
					280
					285
					290
					295
					300

					305
					310
					315
					320
					325
					330
					335
					340
					345
					350
					355
					360
					365
					370
					375
					380
					385
					390
					395
					400

4. THE TAJ MAHAL

For five and twenty years of my life had I been looking forward to the sight now before me. Of no building on earth had I heard so much as of this, which contains the remains of the Emperor Shah Jahan and his wife. We had ordered our tents to be pitched in the gardens of this splendid mausoleum, that we might have our fill of the enjoyment which everybody seemed to derive from it; and we reached there about eight o'clock. I went over the whole building before I entered my tent, and I can truly say that everything surpassed my expectations.

After my quarter of a century of anticipated pleasure, I went on from part to part in the expectation that I must my and by come to something that would disappoint me. But no, the emotion which one feels at first is never impaired; on the contrary, it goes on improving from the first sight of the dome in the distance to the minute inspection of the last flower upon the screen round the tomb. One returns and returns to it with undiminished pleasure; and though at every turn the visitor's attention to the smaller parts becomes less and less, the pleasure which he derives from the contemplation of the greater, and of the whole collectively, seems to increase; and he leaves with a feeling of regret that he could not have it all his life within his reach.

The Emperor and his queen lie buried side by side in a vault beneath the building, to which we descend by a flight of steps. Their remains are covered by two slabs of marble; and directly over the slabs, upon the floor above, in the great centre room under the dome, stand two other slabs of the same marble, exquisitely worked in mosaic. Upon that of the Queen, amid wreathes of flowers, are worked in black letters passages from the Koran. On the slab over her husdand, there are no passsges from the Koran - merely mosaic work of flowers, with his name and the date of his death.

The slab over the queen occupies the centre of the apartments above and in the vault below, and that over her husband lies on the left as we enter. At one end of the slab in the vault her name is inwrought, "Mumtaz - i - Mahal Banu Begum," the ornament of the palace, Banu Begum, and the date of her death, 1631.

The building stands upon the north side of a large quadrangle, looking down into the clear blue stream of the river Jumna, while the other three sides are enclosed with a high wall of red standstone. The entrance of this quadrangle is through a magnificent gateway

---

New Radiant Readers Book VIII, Courtesy by Allied Publishers Private LTD.

in the south side opposite the tomb; and on the other two sides are very beautiful mosques facing inwards, and corresponding exactly with each other in size, design, and execution.

The mausoleum itself, the terrace upon which it stands, and the minarets, are all formed of the finest white marble inlaid with precious stones. The wall around the quadrangle including the river face of the terrace, is made of red sandstone, with cupolas and pillars of the same white marble. The marble was all brought from the Jaipur territories upon wheeled carriages, a distance, I believe, of two or three hundred miles; and the sandstone from the neighbourhood of Dhaulpur and Fatehpur Sikri. Shah Jahan is said to have inherited his partiality for this colour from his grandfather, Akbar, who constructed almost all his buildings of the same stone.

We visited the Moti Masjid or Pearl Mosque. It was built by Shah Jahan, entirely of white marble. There is no mosaic upon any of the pillars or Panels of this mosque; but the design and execution of the flowers in bas-relief are exceedingly beautiful. It is a chaste, simple and majestic building; and is by some people admired even more than the Taj. Few, however, go to see the "mosque of pearls" more than once, stay as long as they will at Agra; and when they go, the building appears less and less to deserve their admiration; while they go to the Taj as often as they can, and find new beauties in it, or new feelings of pleasure from it, every time. (Word Count - 690)

mausolem : கல்லறைக்கூடம், கல்லறை மாடம்
splendid : சிறந்த, உயர்ந்த, பகட்டான
tomb : கல்லறை, நடுகல்
emotion : உணர்ச்சி, மனவெழுச்சி
contrary : எதிர்மாறான, வேறுபடுத்தியுணர், எதிர்நிலையான
slabs : பலகைகள், தகடுகள்
marble : சலவைக்கல்
mosaic : பலவண்ணமமைந்த, பல்வண்ண ஓவியம்
terrace : மொட்டைமாடி
admiration : வியந்து பாராட்டுதல்,
majestic : மாட்சிமை

ROUGH DRAFT

FAIR DRAFT

					5
					10
					15
					20
					25
					30
					35
					40
					45
					50
					55
					60
					65
					70
					75
					80
					85
					90
					95
					100

					105
					110
					115
					120
					125
					130
					135
					140
					145
					150
					155
					160
					165
					170
					175
					180
					185
					190
					195
					200

					205
					210
					215
					220
					225
					230
					235
					240
					245
					250
					255
					260
					265
					270
					275
					280
					285
					290
					295
					300

5. CHOLERA - AN ENEMY OF THE PEOPLE

Europe and Africa are preparing to face an onslaught of Vibrio Cholera, our old friend, the Cholera. This very hard variety of it. El Tox, has been steadily moving West after devastating vast areas in India and Pakistan. In 1966 in Iraq and Iran it killed 14,000 persons. Over the last few years reports have been trickling in from Libya, Kenya and the Soviet Union of its infiltration there. In summer, when people in great numbers will move over the face of Europe. Some of them will be accompanied by this unwelcome fellow-traveller.

Modern medicine has achieved spectacular victories over many diseases, but it solp enemy Cholera, is still underfeated. The vibrios that cause it have been known and isolated for many years and fall into several types. A vaccine is available, prepared from strains that cause the disease, but it only gives protection for about six months to ensure immunity.

Certain areas in Bengal are notorious for the prevalence of Cholera where an epidemic is a common place occurrence. The complete epidemiology of this disease has not yet been mapped out, but it is certain that the main source of the epidemic is the vibrious which infected and "recovered" individuals harbour in their alimentary canal and continue to pass in their stool. Extremely minute quantities of stools teeming with germs manage to get into food or infect drinking water. Flies carry them about on their bodies.

Persons suing the banks of streams or small rivers for their daily needs are likely to contaminate the water. Sudden and violent epidemics often start in these areas. They are also likely to occur after natural calamities such as floods earthquakes. The infection spreads wherever people gather in a mass; in fairs and pilgrimages.

The mortality rate may be very high at the beginning of the epidemic; as much as 50% or over. Most of the deaths occur within then first few days. If the water is contaminated, within a few days a large number of persons is affected.

Symptoms of Cholera

The first symptoms of the disease is the suddenly increased frequency of passing stools. Later, a large quantity of liquid stools is passed. The liquid is characteristically

---

B. B. Yodh: *Illustrated Weekly of India*, October 18, 1970.

watery with plenty of greyish white flakes in it. It looks like dirty rice water. There is no pain but a terrible thirst sets in.

The body tissues lose so much fluid that the tongue becomes dry and the skin wrinkles. As the dehydration increases the eyeballs sink in and the victim looks flushed. Vomiting may occur soon after the diarrhoea. This loss of water is associated with loss of salts from the blood. In many cases the kidneys stop functioning. This leads to increased urea and other poisonous substances in the blood. Although the mind remains clear for a long time, ultimately it too shows the effect of this poisoning. Shock sets in, blood pressure drops and pulse becomes weak. In a few people a large amount of fluid collects in the gut in such a very short time that they may die even before diarrhoea and vomiting become manifiest. This is the course of the cholera sicca of the epidemic. However in a majority of cases if care is taken, recovery soon sets in; the diarrhoea and vomiting can be controlled and the thrist can be quenched by drinking plenty of fluids. In some cases a high fever can set in and perhaps other complications too, which set back the reovery.

Cholera is easy to diagnose during an epidemic. It may be difficult to detect in areas where there are only a few cases, and other causes exist that could give rise to diarrhoea and vomiting. An examination of the stools will show the Cholera vibrios very easily. They have a characteristic shape and swim in the liquid like fish swimming in a stream.

Discovery and Treatment

Sir Robert Koch discovered and isolated the vibrio and confirmed it in Calcutta, and later Sir Leanard Rogers worked out the pathology and discovered the cause of the fatalities, also in Calcutta. All these studies were carried out in the Calcutta School of Tropical Medicine. The work that Rogers carried out, when applied, reduced the mortality rate to about 10%.

The treatment consists in replacing very rapidly the fluids and salts lost from the body in order that blood should not be concentreated. Rogers worked out a method of finding out the quantity of fluids required, by measuring the specific gravity of the blood. The principles of the treatment have remained essentially the same although later scientists have improved on them. Research has been continuously carried out over the last sixty years. For this is a most persistent disease.

In the last few years Dacca has been the centre of Cholera research. Preventive measures are perfected to be applied to all epidemic areas. The World Health Organisation has taken a great interest in the research, on which teams from Pakistan and the U. S. are working. The Indian Council of Medical Research too, has a special committee for investigation leading with Cholera.

Prevention

The first step in prevention is the use of Cholera vaccine (preferably prepared from the local strains of the vibrio) on a large scale wherever large numbers of people are likely

to gather. The availability of a supply of pure water, well insulated from the drainage system, boiling of drinking water and prompt removal of patients to a hospital for treatment, will go a long way towards controlling Cholera. Temporary hospitals set up in epidemic areas have to be stocked with a large quantity of specially prepared fluids suitably bottled. This is still the most essential ingredient in the treatment and takes precedence over antibiotic drugs. No drug alone has as yet proved to be outstanding value for the treatment although several are used. These hospitals also require trained paramedical staff in large numbers to look after the initial wave of victims.

The violent, sweeping and largely fatal Cholera could be controlled if such provisions are made and precautions taken swiftly. Of course it is important to understand that Cholera is a very hardy bacilli and will always be a menace in our country until poverty, overcrowding and careless sewage disposal are eliminated. It is also largely a question of mass - education for ultimately it is the ind vidual who has to eliminate the possibility of being affected by Cholera and take all the steps that preventive medicine prescribes. Man and medicines must co-operate to defeat this; his oldest enemy. (Word count : 1040).

infiltration	:	ஊடுருவல்
victories	:	வெற்றிகள்
vaccine	:	வாக்ஸின்
immunity	:	விலக்கு, விடுபாடு
prevalence	:	பரவிநிலவல்
occurence	:	நிகழ்ச்சி
source	:	பிறப்பிடம்
alimentary canal	:	உணவுப்பாதை
calamities	:	இடையூறுகள்
symptoms	:	நோய் அறிகுறி
tissue	:	திசு
diarrhoea	:	வயிற்றுப்போக்கு
poisoning	:	நஞ்சாதல்
complications	:	கோளாறுகள்
persistant	:	பிடிவாதமான
drainage system	:	வடிகால் வசதி
ingradient	:	கலவையிற் சேர்ந்துள்ள பொருள்
antibiotic drugs	:	உயிர் எதிரி மருந்துகள்
bacilli	:	பாசிலி என்னும் பாக்டிரியா
sewage	:	சாக்கடை

devastating	:	அழிந்துகொண்டு
spectacular	:	காட்சிக்குரிய
undefeated	:	தோல்வியுறுத
isolated	:	தனிமைப்படுத்து
protection	:	பாதுகாப்பு
notorious	:	கெட்டபெயர்பெற்ற, இகழார்ந்த, நாடறிந்த
epidemic	:	தொற்றுவியாதி
epidemiology	:	தொற்றுநோயியல்
recovor	:	நலம்பெறல்
contaminate	:	கறைப்படுத்து, தூய்மைகெடு
pilgrimages	:	புண்ணியப்பயணம்
dehydration	:	உலர்த்துதல்
kidney	:	சிறுநீரகம்
vomiting	:	வாந்தி
fatal	:	சாவுக்குரிய
investigation	:	தேர்வாராய்வு
insulated	:	தனித்தவை, மின்சாரம் பாயாமல் காப்பிடு
essential	:	மிக அவசியம்
precedence	:	முன்னிகழ்ச்சி
menace	;	பேரிடர், அச்சுறுத்து, பேரிடம் அறிகுறி

ROUGH DRAFT

FAIR DRAFT

					5
					10
					15
					20
					25
					30
					35
					40
					45
					50
					55
					60
					65
					70
					75
					80
					85
					90
					95
					100

					105
					110
					115
					120
					125
					130
					135
					140
					145
					150
					155
					160
					165
					170
					175
					180
					185
					190
					195
					200

					205
					210
					215
					220
					225
					230
					235
					240
					245
					250
					255
					260
					265
					270
					275
					280
					285
					290
					295
					300

					305
					310
					315
					320
					325
					330
					335
					340
					345
					350
					355
					360
					365
					370
					375
					380
					385
					390
					395
					400

6. FLOATING AND SINKING

In order to float, an object must be able to push aside its own weight of water, If you took away the block of water, the forces that had been holding it up would be available to support some other object of the same weight. They could easily support an empty petrol can because the weight of the metal can plus the air inside would be much less than a slmilar volume of water. But they could not support the same can filled with water, for weight of the can plus the water inside would be greater than a similar volume of water. In other words, the upward force acting upon an object in water equals the weight of the water pushed aside, so the object must displace its own weight in water if it is to float. This idea was put forward by Arcimedes, a Greek scientist, over 2,000 years ago.

A lump of metal will not float but the same piece of metal made into thin plates and shaped so that it will push aside a much larger amount of water (like the petrol can) will float. A ship is just a specially constructed tank, displacing enough water to float, even though it has to carry a cargo as well as its own weight. If, through some mishap, the ship begins to fill with water, it will become just like the water - filled petrol can. Through the added weight of the rising water the ship will sink lower and lower in order to displace move water to balance its increasing weight. Finally, when the weight of the ship and the water in it becomes more than the weight of the water in can displace, it will sink.

Steel shlps, holed below the water line by an exploding torpedo or mine in time of war, as shown on the right, have been known to fill with water and sink in a matter of minutes. Wooden ships, on the other hand, have been known to remain afloat for a long time when holed and fllled with water. The reason is that a log of timber normally contains tiny air - filled cavities between its fibres. Because of this, it is fairly bulky in proporation to its weight and, like the empty petrol can, is much lighter than a similar volume of water. When it is filled with water the weight of the ship plus the water inside is still less than the weight of a similar volume of water. It will just float lower in the water, displacing more water to balance its increased weight, just as a petrol can filled with petrol will float lower than an empty petrol can. Eventually the ship will sink, for water gradually seeps in between the fibres of the wood and replaces the air held in the cavities until the weight of the water - filled and water - logged ship becomes greater than a similar amount of water.

Understanding Science 1: By Courtesy, IBH Publishing House.

Some kinds of timber, such as ironwood and ebony, will. not float at all. This is because the fibres in them are pacaed so closely that a log of the timber weights more than a similar volume of water. On the other hand, balsa wood floats with very little of its volume submerged. It is so light, and its fibres so loosely packed, that it only needs to sink a little way into the water to push aside its own weight of water. (Word Count - 575)

block	:	தடை
lump of metal	:	உலோகக்கட்டி, மொத்த உலோகம்
sink	:	மூழ்கு
afloat	:	மிதந்துகொண்டு
air - filled cavities	:	காற்று அடைக்கப்பட்ட குழிகள்
fibres	:	நார்கள்
Eventually	:	முடிவாக விளைகிற
Submerged	:	நீரில் மூழ்கு
seeps	:	கசி
replace	:	ஈடுசெய்
water - logged	:	நீர்சூழ்ந்த
mishap	:	இடையூறு, தற்செயல், இடர்

ROUGH DRAFT

FAIR DRAFT

					5
					10
					15
					20
					25
					30
					35
					40
					45
					50
					55
					60
					65
					70
					75
					80
					85
					90
					95
					100

105

110

115

120

125

130

135

140

145

150

155

160

165

170

175

180

185

190

195

200

7. OIL IN THE EARTH

We cannot, of course, see the oil which is trapped deep down in the ground. Men must study the rocks carefully. When they think that the rocks in a certain place may contain oil, a metal tower called a derrick is built. A machine in the tower gradully cuts a narrow hole down into the ground. As the hole is made, a steel pipe is pushed down to stop the sides from falling in, and to keep out water. At last, if the man have judged correctly, the hole reaches the oil. Usually the oil rushes up the pipe with great force, driven by the pressure of the gas in the top of the layer of rock, and it streams high into the air. If this oil should catch alight, there would be a terrible fire. A kind of lid is fixed to the top of the pipe, and the oil is allowed to flow out gently through taps. After a "well" has been used for a long time, it may be necessary to use a pump to get the oil out.

Oil, we see, is obtained more easily than coal. Men must dig coal from a mine, but oil rushes up a pipe. Often several wells are made, each reaching the same supply of oil in the ground. If a well is made near the middle of the oil-field, gas will be obtained. This may blow out of the well with great force if it is not controlled. In parts of America such gas is sent through pipes to distant towns, and used, like coal-gas in houses and factories.

The oil which comes from a well may be a pale brown, easy flowing liquid, but more usually it is dark brown, thick and sticky. It is a mixture of many kinds of hydro-carbons. The factories in which the various oils (petrol, kerosene, etc.) are got out of this mixture are often many miles away from the wells; in fact, they may be in another country across the sea. Thc rock-oil (petroleum) is sent to these places, or to ships at a port, through steel pipes. Thc pipes may cross hundreds of miles of land, and pumps at various places drive the sticky petroleum along.

When we boil some water in a pot over the fire, it changes into a vapour (steam). If we hold a plece of cold glass in the vapour, drops of water form on it. The vapour changes back into a liquid. Now suppose we carefully heat a mixture of petrol and kerosene. (Do not try this; it might catch alight and cause damage!) Suppose we make

---

Higher Secondary English Selections: By Courtesy West Bengal Council of Higher Secondary Education 1971.

the mixture a little hotter than boiling water. The petrol, which boils easily, turns into a vapour; but the kerosene, which does not boil so easily, remains as a liquid.

We can collect the petrol vapour and cool it in another container so that it turns back into a liquid. In this way we have separated the two oils. There is another, similar way of separating two oils. We can heat the mixture so that both oils turn into vapour and then slowly cool the vapours. The kerosene vapour turns into a liquid first and can be collected; the petrol does not turn into a liquid until it has been cooled much more.

Petroleum is a mixture of many oils, but they can be separated in the ways we have described. The second way is now more common. The petroleum is made very hot and passed into the bottom of a tall tower. There are shelves in the tower. As the vapours rise up the tower, they slowly cool. The thick, heavy oils turn back into liquid near the bottom. Other oils turn back into liquids higher up. (Word Count 630)

gradually	:	படிப்படியாக
coal-gas	:	நிலக்கரிவாயு
vapour	:	நீராவி
lid	:	மூடி

ROUGH DRAFT

FAIR DRAFT

					5
					10
					15
					20
					25
					30
					35
					40
					45
					50
					55
					60
					65
					70
					75
					80
					85
					90
					95
					100

					105
					110
					115
					120
					125
					130
					135
					140
					145
					150
					155
					160
					165
					170
					175
					180
					185
					190
					195
					200

					205
					210
					215
					220
					225
					230
					235
					240
					245
					250
					255
					260
					265
					270
					275
					280
					285
					290
					295
					300

8. DEMOCRACY

Perhaps the most famous definition of democracy is that of Abraham Lincoln who defined it as government 'of the people', 'by the people', 'for the people', stressing the word 'people'. The word itself is derived from the Greek 'demos', meaning the people. The word 'people' may mean various things; it may mean all people, including rich and poor, or it may mean a large sector of the majority of the people, probably the manual workers. The Greek philosopher, Aristotle, distinguished between two concepts of democracy; the true form in wich all governed in the interest of all; and the wrong form in which the masses governed in their own interest. Today we should accept as a definition (notice the stress on the word 'all') 'government of all the people' (that is to say, all are subject to the decisions of the government) by all the people (all are responsible for electing the government) for all the people (the government rules in the interest of all and not in the communal interest of a section of the population). It may happen that a dominant majority in power rules in its own interest.

The development of the structure of democracy in history is from what are called 'primary' forms to representative forms. A primary democracy is one in which the people govern themselves directly by decisions taken in an assembly attended by all. This sort of democracy is obviously conceivable only in small states. The structure of democracy in large states must be different, since such policy - making assemblies are not possible, the solution lying in a system of election of representatives of the people to perform the business of government. Parliamentary democracy, found in many countries today, is of the latter type. Primary democracies existed in Greek and Roman times and were characteristic of the medieval city states of, for example, Italy.

The definite history of representative democracy began in the 13th century when councils of elected representatives of the town and cities were added to the existing councils of the fuedal nobility. This system was imperfect, since such councils represented only a small sector of the population, the privileged classes, and had very little definite authority. In the structure of society at the time, the really predominant elements were the monarchy and the aristocracy. Gradually, however, because the monarchy learned to rely more and more on the support of the new middle class of urban origin, the power of

---

A Preparatory General English for College—Physical Sciences. By Courtesy, Director, Central Institute of English, Hyderabad and M/s. Orient Longmans, Madras.

these representative bodies increased, and with the establishment of the Cabinet System they began to exercise definite control over the ministers of the crown and so over the conduct of government.

From the very beginning, the structue of parliamentary democracy in the USA has been different from that found in European countries. We may define American democracy as of the 'presidential' type, under which the people elect the President and the representative body separately. The President and the Congress must co-operate in government and may check one another. The 'cabinet' type of democracy, found in Europe and in India differs in that the people elect their representatives, the predominant party nominating a group of ministers to form a cabinet and also nominating a Prime Minister or Premier (who is usually a person of great prestige). The Prime Minister and the cabinet, belonging to the predominant party, rule in the name of the majority and in their policies reflect the wishes of Parliament and of the people.

Since all the people in a domocracy do not share the same doctrines, policical parties reflecting these differences of opinion, are formed and try to win the support of the people in the hope of being elected to Parliament. In theory this should mean that all political opinions are reflected in the dicisions of the government. In fact, of course, government by the people means government by the majority and decisons taken by Parliament are not often unanimous. But at least since other political doctrines are represented, in Parliament, the people enjoy freedom of discussion and freedom of choice, two definite features of parliamentary democracy. Parliament under this system is the custodian of the freedom and rights of the people.

Democracy is a method of government, concerned with the management of politics; it is not a way of managing economics and the social life of a people. Within a democracy, economic policy can be either capatalistic or socialistic. (Word Count 820)

Philosopher	:	தத்துவ அறிஞர்	Feudal	:	நிலமானிய
Democracy	:	ஜனநாயகம்	Monarcay	:	முடியாட்சி
Mass	:	மக்கள்	Cabinet	:	மந்திரிசபை
Govern	:	ஆள்	Doctrines	:	கொள்கைகள்
Representative	:	பிரதிநிதி	Political	:	அரசியல்
Decision	:	முடிவு	Unanimously	:	ஒருமனதாக
Assembly	:	சட்டமன்றம்	Economics	:	பொருளாதாரம்
Structure	:	அமைப்பு	Capitalistic	:	முதலாளித்துவ
Policy	:	கொள்கை	Socialistic	:	சோசலிச
Election	:	தேர்தல்	Primary	:	முதன்மை
Government	:	அரசாங்கம்	Solution	:	தீர்வு
Parliament	:	பாராளுமன்றம்	Reflect	:	பிரதிபலி
Council	:	குழு	Discussion	:	கலந்துரையாடல்

ROUGH DRAFT

FAIR DRAFT

					5
					10
					15
					20
					25
					30
					35
					40
					45
					50
					55
					60
					65
					70
					75
					80
					85
					90
					95
					100

				105
				110
				115
				120
				125
				130
				135
				140
				145
				150
				155
				160
				165
				170
				175
				180
				185
				190
				195
				200

					205
					210
					215
					220
					225
					230
					235
					240
					245
					250
					255
					260
					265
					270
					275
					280
					285
					290
					295
					300

9. HISTORY OF NURSING

Florence Nightingale gave nursing a dignity and obtained for it an honoured recognition. But the profession is much older than her reformist arrival on the scene.

Probably the earliest reference to nursing is in the Sushrut Samhita. It is not easy to date this except for the fact that Dhanvantari Divodas, the Guru of Sushrut, is supposed to have been the ruler of Kashi about 3,000 B.C. Sushrut says that for the treatment of any illness four things must be considered; the Patient, the Vaidya, the medicine and the Paricharak. The last word changed later to Parikarmi, which means a nurse.

Distinct details about the duties and the personality of the nurse are given. He should be strong-minded, healthy and compassionate. Instructions are given to him regarding diet, types of dressing, the needs of the patient, and other arrangements.

Other early references to this service are found in the Ashtang Hridaya by Vaghbhart, where he discusses surgery and wound dressing.

Even in the Kama Sutra there is a mention of the care of the sick in the art of home-making. The inference has been drawn by many that this is for the house-wife who should know how a patient should be looked after at home.

In India "Rugnaseva" or serving the sick has always been regarded as the highest service one can render one's fellow beings. Gandhiji believed in the paramount value of nursing. In fact he himself cared for one of his followers, Parchure Shastri, who had got two leprosy due to serving the lepers.

In general, nursing can be divided into the Pre-Nightingale period, the pioneer Nightingale period 1860-1900, the period of professional internationalism between the world wars, and the present.

Early Nursing in Europe

Since Phoebe's time in A. D. 60 nursing has been recognised as the work of mercy by the Christian church. In the 6-th Century this was one of the services done under the

---

A. S. The Illustrated Weekly of India, November 8, 1970

rules laid down by St. Benedict. These were later adapted by the Catholic and Protestant nursing orders and also by the Red Cross.

Strict discipline in nursing came about when military nursing orders like Knights Hospitaller of St. John of Jerusalem were started.

In 1634 Louise de Marillack took a vow to work under St. Vincent de Paul modernisation started then with orders like Sisters of Charity.

In 1639 the first nursing Sisters crossed the Atlantic to Quebec. Jeanne Mance (1606—73) was the first white woman to arrive at Montreal in 1664. Visiting nursing was introduced Canada by Mmed' Youville who started the order of the Grey Nuns in 1755. The foundations of the Modern Deconesses Movement were laid in 1836 by Pastor Theodor Flineder.

In U. S. an indigenous order was organised by Elizabeth Ann Seton in 1809 and in 1917, it was assimilated in the sisters of Charity. In 1923 these sisters undertook hospital nursing. Anglican, Sisterhoods provided nursing services in St. Luke's Hospital New York, in 1858, and in the Children's Hospital, Boston in 1871.

Beginnings of Modern Nursing

Florence Nightingale was the founder of modern nursing. Convinced of the need for reform in nursing she had just opened an institution for the care of the sick in London when in 1854, the Secretary of War asked her to undertake the nursing of wounded soldiers in the Crimea. After her arrival the death rate dropped dramatically from 50% to 2%.

The glory of this achievement was rightly recognised by the world. Funds were raised in her honour and she used these to start a school of nursing at St. Thomas Hospital in London. Fifteen probationers joined on June 15, 1860. The Modern era in nursing had begun.

By the latter part of the 19-th century the general principles laid down by her were adopted in English speaking countries. Pioneers from England and the U. S. A. established mission schools in China, Japan and India and a little later in the Middle East.

The First "Nightingale" School of nursing in the U. S. A. was established at Bellevue Hospital, New York City in May 1873.

The 20-th Century

Just before the end of the 19-th century the profession had developed a marked trend towards self-organisation. In 1887, Mrs. Bedford Fenwick established the British Nurses' Association. A few Associations were established in the U. S. Mrs. Fenwick became the founder of the International Council of Nurses in 1899.

In 1908 the Canadian nurses formed an association. The American Association (1896) joined the I. C. N. The Finnish (1896) and Danish (1899) organisations joined a little later.

In America the National League of Nursing Education (1883) and the National Organisation for Public Healh Nursing (1912) helped in the advancement of Nursing. In Britain the College of Nursing was the force behind the progress in nursing techniques and knowledge.

By 1912 nurses from the U. S., Great Britain, New Zealand and a few other countries started nursing in homes and took part in specialised health programmes like child welfare, school nursing and eradicating tuberculosis.

In the U. S. A. the conditions in hospitals during the American Civil War were quite as shocking as those in the Crimea before Miss. Nightingale came on the scene. Only when the Spanish - American War brought out the need for military nursing, was the Naval Nursing Corps organised in 1903. In England the Territorial Army Nursing service was organised in 1907, and its members commissined in 1941. In 1904 Canada became the first country to give commissions to nurses in the Armed forces. In the U. S. A. this was done after World War I, and then only on a temporary basis. It was in 1947 that nurses in the U. S. Armed Forces were permanently commissioned.

After the two world wars, many National Red Cross Societies established nursing schools to train non-professional volunteers for nursing services, and more and more emphasis was laid on training nurses professionally.

The Modern Age in nursing is significant for its emphasis on scientific training and tremendous specialisation.

This profession has always attracted women because women are naturally symphathetic and used to caring for people. They also have the capacity of giving scrupulous attention to the smallest details which is one of the requisites of nursing.

Nursing cannot be only a profession, it is also a vocation which demands conscientiousness, devotion and all embracing compassion for suffering humanity.

(Word Count - 1148)

Recognition	: கிணைவுகூர்தல்	Leprosy	: தொழுநோய்
Internationalism	: எல்லாநாட்டுக்குரிய	Indigenous	: தன்நாட்டிலுண்டான
Assimilated	: தன்வயப்படுத்து	Reform	: சீர்திருத்தம்
Trend	: போக்கு, விருப்பம்	Eradication	: ஒழிப்பு
Territorial Army	: நாட்டுக்காவற்படை	Professional	: தொழிலுக்குரிய
Tremendous	: வியப்பைத் தருகிற	Conscientiousness	: நேர்மையான
Compassion	: இரக்க உணர்ச்சி		

ROUGH DRAFT

FAIR DRAFT

					5
					10
					15
					20
					25
					30
					35
					40
					45
					50
					55
					60
					65
					70
					75
					80
					85
					90
					95
					100

				105
				110
				115
				120
				125
				130
				135
				140
				145
				150
				155
				160
				165
				170
				175
				180
				185
				190
				195
				200

					205
					210
					215
					220
					225
					230
					235
					240
					245
					250
					255
					260
					265
					270
					275
					280
					285
					290
					295
					300

					305
					310
					315
					320
					325
					330
					335
					340
					345
					350
					355
					360
					365
					370
					375
					380
					385
					390
					395
					400

10. MEANS OF TRANSPORT

Man loves to travel from place to place. Sometimes he does so only for pleasure. More often he travels to sell the goods he produces and to buy the ones he needs. To travel comfortably and quickly he needs good means of transport. The chief means of transport now a day are roads, railways, waterways and airways.

Asia had many overland routes in the past. These were the great caravan routes. Indian and Chinese merchants traded with the countries of Europe by these routes. Merchants and missionaries from Europe used the same routes. They mostly used camels, mules and horses to carry their goods. Marco polo was the first European to cross the whole breadth of Asia in this way; He came from Venice, a famous port of Italy. He visited the countries of Central and Southern Asia. He was the first European to give an account of China, its people, cities and rivers.

In most countries of Asia the old caravan routes have been replaced by roads. Each country has its national highways. Motor cars, lorries and trucks now carry passengers and goods from place to place. Some countries have better and more roads. Desert and mountainous areas have less mileage of roads than the plains and the river valleys.

Now a days great progress has been made in the construction of railways. The railways are the chief means of inland transport in many countries. India, China, Japan and Siberia have their own systems of railways. They handle most of the internal trade and commerce.

A large number of people also travel by them. Some railway lines run across a continent. These are called transcontinental railways.

The Trans - Siberian Railway is the longest railway line in the world. It is over 6000 kilometres long. It runs between Vladivostok, a port on the east cost of Asia, and Leningrad on the Baltic Sea. Irkutsk, Novosibirsk and Omsk are other important stations on this line. This railway line transports furs, wheat, coal and machine - made goods.

Waterways include river transport and sea - routes. Many of the great rivers of Asia are navigable. It means ships and boats sail on their waters. The Yangtze Kiang, the

Mekong, the Irravaddi the Ganga and the Indus are famous water ways. The rivers of North Asia are navigable in their upper courses but their mouths are frozen in winter. So they are closed for boats etc., in winter.

The great ocean route from Europe to the far east passes through the Suez Canal. Aden, Colombo, Singapore, Hong - Kong, Shanghai and Tokyo are important parts on this route. From Colombo branches of this route go to Bombay, Calcutta, Rangoon and Australia. The second route is the Pacific route. It joins the eastern part of Asia with the western coast of North Amerca.

Airways are becoming very important in Asia. Asia is a continent of long distances. It has many airways. The Russian air - routes are mostly in the north and the central parts of Asia. The chief of these runs almost along the Trans - Siberian railway line. Airlines of many countries - Britain, France, America, India, Pakistan, Bengla Desh and Holland follow the Southern route. They use International air - ports such as Beirut, Baghdad, Tehran, Karachi, Delhi, Calcutta, Rangoon, Singapur, Hong-Kong, Manila and Tokyo. (word count: 530)

Caravan routes	-	வாணிகப்போக்குவரத்து வழிகள்
navigable	-	கடல்வழி
frozen	-	உறைந்த

ROUGH DRAFT

FAIR DRAFT

					5
					10
					15
					20
					25
					30
					35
					40
					45
					50
					55
					60
					65
					70
					75
					80
					85
					90
					95
					100

					105
					110
					115
					120
					125
					130
					135
					140
					145
					150
					155
					160
					165
					170
					175
					180
					185
					190
					195
					200

11. THE BOOK

A brorken back shortens the life even of a book. Have you seen a person open a book, especially a new one, and bend it back so sharply that it cracked. Each book received by a library is opened carefully. It is held with the backbone flat and each cover is opened and a few pages pressed down, first from the front and then from the back, until the whole book is gone through. Open books should not be put face down; neither should the place be marked with a thick object.

Parts of a Book

Understanding the parts of a book saves time. Skill in the intelligent use of books can be dcveloped easily, and is much more satisfactory than the "hunt and peck" system.

Title Page

The first important printed page in a book is the title page. Besides the full name of title of the book it gives the author, place, or places of publication, publisher's name, and usually the date of printing.

The full name of a book always appears on the title page. Occasionally it is fuller or longer than the title on the back of the book because it includes a descriptive phrase or sub-title-as, A Christmas Carol in Prose; Being a Ghost Story of Christmas. In listing titles on a bibliography, be sure to use the one on the title page.

Author

The list of degrees after an author's name, especially in non-fiction books, is a clue to his standing as an authority. Occasionally a few of his most important works may be given.

Editors, Compilers, Illustrators, Translators

If anyone of importance besides the author is responsible for the book, his name also appears on the title page-for example, an outstanding critic editing an author's works, an

issustrator of note or some one Collecting or Compiling the stories, poems or essays of a number of authors.

Edition and Reprints

All copies of a book printed from a set of plates make up an edition. If more copies are printed later changed are made in the book either bringing it up to date or adding material, it is called a new or revised edition. In science and many other subjects, it is important to have the latest edition.

Publisher

If a publisher specializes in a certain kind of book, his name on the title page suggests the excellence of the work. The same applies to almost any book printed by a publisher of established reputation.

Copyright

Copyrighting a book is like patenting an invention. It guarantees ownership and Protection in publishing for a period of twenty-eight years, with the privilege of reneval for a similar period. The copyright date verifies the first publication of the book in the United States; it usually appears on the back of the title page. For famous books that have been printed in many editions, the copyright date indicates only the first appearance of that particular edition. An author copyrighting a book must deposit two copies in the Library of Congress in Washington and pay a fee for copyrighting.

Preface or Foreword

In the preface or foreword the author states his purpose in writing the book and expresses indebtedness to those who assisted him.

Contents

The table of contents near the front of the book cannot be used as or take the place of an index. It is merely a list of the chapters or parts of the book, occasionally including a summary or analysis of each chapter.

Illustrations Maps etc.

A list of pictures, maps, and other illustrations, in the order of their appearance in the book, helps the reader locate one of them quickly.

Introduction

The introduction differs from the preface in that it is about the subject matter of the book. It prepares the reader for the content of the book or interprets it to him. It is important in understanding the book and should not be passed over.

Text and Notes

The main part of the book is the text. Explanatory material in the form of notes frequently appears at the bottom of the page (footnotes) at the end of the chapter, or at the end of the book. The small printer's mark is used in the text and besides the note to which it refers.

Glossary

A glossary is a list of uncommon words, technical terms, or words with a special meaning for a science, an art, a dialect, or some other work. It should not be confused with a vocabulary in a foreign grammar.

Appendix

Many instructors expect you to know material found not only in footnotes, but also in an appendix. The latter is supplementary or added meterial that cannot be introduced easily into the test, such as tables, notes and bibliographies.

Bibliographies

A bibliography is a list of references-books, magazine or newspaper articles, manuscripts, documents, pamphlets, and so forth-often appearing at the end of a chapter, at the end of a book, or at the end of an article in an encyclopaedia or other referance book. Freqnently the meterial printed on an important subject is so extensive that the list fills a whole book. People who plan to specialize in a subject should find out what bibliographies have been printed in that field. Many such reference lists have descriptive notes which help in selecting the best books or other materials. These are called annotated bibliographies. A subject bibliography is a list of an author's works.

Indexes

Do you "thumb" through a book to find what you want? That is like sharpening your pencil with a knife when a mechanical sharpener is at hand. In comparison, an index saves even more time. It is an alphabetical list of everything of importance treatd in the book, and is usually found at the end of the book. An index saves time by locating information buried somewhere in the book and by preventing fruitless searching for information not treated in the book.

Types of Indexes

The most commou type of index is the general index of names, subjects, titles, and so forth. In some books, it is broken up into several indexes: for example, a subject, index, a title index, and an author index. Be sure to notice the type of index if the book has more than one each volume in a set of books may have an index, but a general index usually appears in the last volume. In a general index the volume number is indicated in Roman numerals to distinguish it from the page number. Some sets of books group their information under large subjects, and a general index is the only clue to their sub-divisions or small subjects. Frequently the set is published over a period of years, and up-to-date material is included in the later volumes with no plant for it at the beginning, in the earlier volumes. This new material is, therefore, not referred to by cross references. You can see the necessity of consulting the index volume to get every bit of needed information. The following list of a few of the references under Industrial Hazards is from the index volume of Encyclopaedia of the Social Sciences:

Industrial Hazards- vii 697-705; Accidents Industrial i 391-401; Automobile Industry ii 327 a; Cement iii 290a; Child (Labor) iii 422a; Clerical Occupations iii 552b.

Only two of the above references are listed among the cross references at the end of the article "Industrial Hazards," which shows the importance of consulting the index volume.

A cumulative index is one that becomes larger by successive additions, This is true of indexes to periodicals, which are published each month and then cumulate into an annual volume by adding together all of the monthly indexes into a single index, all in one alphabet. The same is true of some yearbooks which cumulate the index every few years to reveal information found in previous volumes.

Cross References

Very often two or more words mean exactly or nearly the same thing. The page references (in an index) cannot be entered under every one of these synonymous subjects, therefore, it is necessary to provide some device to assist people who would each look under a different word. This device is called a cross reference, because it leads across to the subject in the index where the desired information is listed ; for example Farming, see Agriculture.

Another type of cross reference is the see also reference, which tells where additional material can be found; for instance, Farm Buildings, see also Agricultural Engineering; Barns; Stable. Be sure to follow up a cross reference in order to get all of the information you need. Besides being useful in indexes, they are an indispensable device in alphabetically arranged books and card catalogs. (Word Count : 1470)

Crack	:	வெடிப்பு
Editor	:	பதிப்பாசிரியர்
Compile	:	தொகு, திரட்டு
reputation	:	மதிப்பு, நற்பெயர்
copy right	:	பதிப்புரிமை
glossary	:	கலைச்சொற்கள்
footnotes	:	அடிக்குறிப்பு
magazine	:	மாதஇதழ்
manuscripts	:	கையெழுத்துப்படி
documents	:	பத்திரம்
pamphlets	:	துண்டுவெளியீடுகள்
Encyclopedia	:	கலைக்களஞ்சியம்
indispensable	:	இன்றியமையாத

ROUGH DRAFT

FAIR DRAFT

					5
					10
					15
					20
					25
					30
					35
					40
					45
					50
					55
					60
					65
					70
					75
					80
					85
					90
					95
					100

					105
					110
					115
					120
					125
					130
					135
					140
					145
					150
					155
					160
					165
					170
					175
					180
					185
					190
					195
					200

					205
					210
					215
					220
					225
					230
					235
					240
					245
					250
					255
					260
					265
					270
					275
					280
					285
					290
					295
					300

					305
					310
					315
					320
					325
					330
					335
					340
					345
					350
					355
					360
					365
					370
					375
					380
					385
					390
					395
					400

					405
					410
					415
					420
					425
					430
					435
					440
					445
					450
					455
					460
					465
					470
					475
					480
					485
					490
					495
					500

12. POLITICAL ORGANISATION THROUGH THE AGES

Every country, big or small, has some form of government. It is the Government that keeps law and order in the country and protects the life and property of people. There are some countries ruled by kings. Such countries are called monarchies. In most countries the Government is run by the respresentatives of the people. They are known as republics.

From very early times, we have had some form of government in our country. In the Vedic period there were monarchies and republics flourishing side by side. The kings ran the administration for the benefit of the people. They were not despots. They ruled according to the wishes of the people. There were Sabhas and Samitis to advise them. The leading members of the Sabha formed the Samiti. Thus the people had a share in the Government through their Sabhas and Samitis.

The Republics also functioned very well during the Vedic period as well as Buddsht times, The Yaudheyas, the Arjunayas and the Lichchhavis were some famous republics of the olden days. The administration in these republics was carried on by a council of leaders of people.

In course of time some of the kings grew powerful. They extended their kingdom by conquests and called themselves emperors Chandra Gupta Maurya, Ashoka, Kanishka, Samudra Gupta Chandra Gupta Vikramaditya and Harshavardhana were famous emperors of the ancient period. They were not only famous warriors but also good rulers. Their administration was strong and efficient. They always worked hard for the benefit of their people.

In South India the Chola, Pandya and Chera kings ruled. They were good administrators. They encouraged learning and built a number of temples. They encouraged the Panchayats in villages. The Panchayats looked to the welfare of the village people. So the villages were rich and prosperous.

The Muslim rulers excepting a few gave a stable administration to the country. Allauddin Khilji, Feroz Shah Taghlaq, Sher Shah and Akbar were some of the famous Muslim rulers. They built roads and provided irrigation facilities. They allowed the Panchayats in villages to work smoothly.

History: 8th class By Courtesy Combridge Publishing House.

After the decline of the Mughal rule India came under the rule of the Britishers. The British rulers set up a strong administration. Their main aim was to keep law and order. They did not concern themselves about the welfare of the Indians. The educated Indians soon realised that India could not progress under such a rule. They became politically conscious and began to demand greater and greater share in the administration. The British Government could not resist this popular demand. So it started making reforms. In order to associate Indians in the administration, the Acts of 1861, 1892, 1909, 1919, and 1935 were passed. But the Indian leaders were not satisfied with this slow process of reform. They demanded complete freedom. They carried on a non-violent struggle under Mahatma Gandhi. Finally in August 1947 the British rule came to an end and India became free.

Since August 1947 our national government has been taking a number of steps to improve the lot of our people. The most important of these is the revival of local Self-Government. The Panchayat System, which worked well during the Hindu and Muslim periods, declined during the British period. The villages were neglected and rural people began to suffer from poverty and misery. Lord Ripon, one of the most sympathetic Viceroys, took steps to introduce self-government in urban and rural areas. Municipalities and District Boards were set up to look to the welfare of the urban and Rural people. District Boards have now been replaced by Zila Parishads.

You know India is a land of villages. More than 80% of our people live there. It is not possible for the central government and the state Governments to look to the needs of our villages. The Panchayat System alone can do good to the villages. So our government has revived the Panchayats or Gram Sabhas. The Panchayats consist of elected memders of the villages. They are given powers to improve their resources and satisfy the needs of the village. They raise money by way of taxes and they also get funds from the state Government. They are doing good work. The prosperity of our villages depends upon the efficient working of our Panchayats.

(Word Count 685)

Monarchies	:	முடியாட்சிகள்
Republics	:	குடியரசுகள்
adminstrators	:	நிர்வாகிகள்
resist	:	தடை
misery	:	துன்பம்

ROUGH DRAFT

FAIR DRAFT

					5
					10
					15
					20
					25
					30
					35
					40
					45
					50
					55
					60
					65
					70
					75
					80
					85
					90
					95
					100

					105
					110
					115
					120
					125
					130
					135
					140
					145
					150
					155
					160
					165
					170
					175
					180
					185
					190
					195
					200

					205
					210
					215
					220
					225
					230
					235
					240
					245
					250
					255
					260
					265
					270
					275
					280
					285
					290
					295
					300

13. EROSION

THE process known as erosion is one of the fundamental factors which influence the changes constantly taking place on the face of the earth. It is a part of the general process known as denudation.

Since Man depends for his food upon articles produced from the earth's layer of fertile soil, it is of vital importance that none of this soil should be wasted, if this can be prevented, plants, animals, minute organisms, insects centipedes, millipedes are always constantly at work in the fundamental process of converting rocks and rock dust into soil. This process has been going on for centuries and is of vital importance for human existence. But all over the world, especially during the last hundred years, in their search for land to cultivate, men have denuded vast areas of the trees which help to hold soil in its place, and have brought under cultivation land which wasnot suitable because it could not resist the cumulative effects of wind and rain. Soil in lands of this type is converted into mud under heavy rainfall and is carried away by rivers and lost for ever.

This is exactly what happend in the Tennesse valley area of the U. S, A., where a large farming belt, denuded of protective vegetation, was completed eroded by wind and rain. The Tennesse valley Administration was established by the U. S. Government in order to bring this area back under cultivation.

Erosion, the result of years of denudation, constitutes a serious problem in many parts of Africa where the custom was to burn down large belts of forest, because it was known that the soil underneath was fertile. Once the trees were gone,there was nothing to hold the soil which in heavy rainfall was carried away and lost.

It is now well realised that this cumulative process of denudation can vitally affect the economy of a country and in most cases efforts are being made to counteract the effects of denudation and to repair the damage caused by erosion. In the Tennesse valley, for example, scientists and engineers have co-operated in gigantic schemes to solve a gigantic problem. Dams have been built to prevent intermittent floods and to produce cheap electricity; hills have been levelled or terraced; special plants and trees have been introduced to start again the process of conversion of rock dust into soil and to retain the soil produced;

A Preparatory General English Course for Colleges—Social Sciences. By Courtesy, Director, Central Institute of English, Hyderabad and M/s. Orient Longmans, Madras.

soil has been treated with chemicals to restore its fertility; new plants specially adapted to the type of soil fount in the valley have been introduced: housing, educational and health facilities have been greatly improved. What was once an unproductive area has now become one of the most flourishing and prosperous regions in the USA.

In other parts of the world, similar projects are being carried out, though perhaps not on so gigantic a scale. In Africa, parts of the Sahara desert are being gradually reclaimed; in Israel, Iraq and neighbouring countries, various projects of a similar kind have been undertaken.

But it is not only vital to repair the damage done by past generations; it is necessary, by legislation and education, to ensure that denudation remains a things of the past.

(Word Count : 720)

Erosion	நில அரிப்பு	Restore	மீட்டுச்சேர்
Centipedes	பூரான்	Reclaim	மீட்டுக்கொள்
Convert	மாற்று	Generations	தலைமுறைகள்

ROUGH DRAFT

FAIR DRAFT

					5
					10
					15
					20
					25
					30
					35
					40
					45
					50
					55
					60
					65
					70
					75
					80
					85
					90
					95
					100

					105
					110
					115
					120
					125
					130
					135
					140
					145
					150
					155
					160
					165
					170
					175
					180
					185
					190
					195
					200

					205
					210
					215
					220
					225
					230
					235
					240
					245
					250
					255
					260
					265
					270
					275
					280
					285
					290
					295
					300

14. ADVERTISEMENTS

Advertisement is something that we are constantly aware of in newspapers and magazines, on the cinema screen, and in some countries on radio and television. The modern media of mass communication have produced an enormous increase in the amount of commercial propaganda to which we are subjected and most producers of goods today spend a good deal of money on advertisement of various. It is a phenomenon we cannot ignore.

Advertisement must obviously be advantageous to producers, or they would not be willing to spend such a lot of money on it and on finding new ways of attracting custom. But ultimately it is the consumer who pays for the advertisement it may be appropriate to consider whether it is advantageous to him.

There are so many goods available on the market that producer can save the consumer a good deal of time and money by telling him exactly what he can provide. But once he has done this, his effort is directed towards persuading the consumer to buy his products because they are either better or cheaper than somebody elses. If canvassing for the latter purpose is to achieve success, it must be appropriately presented and regularly, not sporadically, repeated. It is necessary to differentiate between information, which we may need about a new product, and canvassing, when endeavours to persuade us to make a choice between various products.

In the case of new commodities, advertisement is necessary to introduce them to the consuming public and to explain their uses. This is particularly true of mechanical equipment with which the public may not be familiar.

Advertisement may also be advantageous to the consumer because it produces an increase in consumption and production and a reduction in price. Frequent advertisement may also help to stabilise demand, and a stable market leads to consistent production and a reduction of waste.

Advertisement is also a guarantee of quality, since a producer who invests money in building up a reputation will not readily endanger it by offering inferior goods. Thus

---

A Preparatory General English Course for Colleges — Social Sciences, By Courtesy, Central Institute of English, Hyderabad and M/s. Orient Longmans, Madras.

advertisement helps to produce consistency of quality. Also, if we have learned to trust the quality of goods produced by a certain manufacturer, we shall be more ready to buy other articles bearing his trade-mark on the assumption that, they will be good. Advertising is also advantageous to the consumer in that if it increases the sale of goods industry prospers and prices may be reduced.

On the other hand, much of the canvassing of which the consumer is the object does not convey information but endeavours merely to draw the public's attention to certain products. There is no obvious connection, for example, between a picture of at smiling girl and a certain brand of sweets; but most people like looking at pictures of pretty girls, and the advertiser's assumption is that by looking at such pictures - the consumer will be influenced to buy his products.

Advertising of this particular kind is planned to stimulate new wants or to induce buyers to change their habits. Its basis is an appeal to emotion rather than to judgement. A man reads that a famous cricketer uses a certain article or a girl sees that a well known film star buys a certain product, and they may both feel a desire to imitate such people and are so induced to follow this example.

The type of advertisement which seems to convey information may be misleading, since the average consumer is not able to differentiate between guarantees of quality. Obviously inferior goods will not sell, but good canvassing may enable goods of bad quality to continue to sell, as the public may take some time to apprehend that it is being cheated. Even people who try to ignore advertisements at some time find themselves buying an article new to them merely because the name of it seems familar.

A skilful advertiser may be able to create practically a monopoly for himself, not because his product is superior but because he has succeeded in inducing people to believe that it is. He may even persuade us that his product, which may be higher priced than others identical with it in quality, is better simply because it is dearer. since we all tend to act on the assumption that high prices indicate high quality. (Word Count: 780)

Advertisement	விளம்பரம்	Trade mark	வியாபாரக் குறி
Communication	தொடர்பு	Stimulate	தூண்டு
Commercial	வணிக	Differentiate	வேறுபடுத்து
Propaganda	பிரச்சாரம்	Monopoly	ஏகபோகம்
Advantageous	சாதகமான	Cousumption	நுகர்வு
Consumer	நுகர்வோர்	Reputation	மதிப்பு
Demand	தேவை	Assumption	கருதுதல்
Emotion	உணர்ச்சி		

ROUGH DRAFT

FAIR DRAFT

					5
					10
					15
					20
					25
					30
					35
					40
					45
					50
					55
					60
					65
					70
					75
					80
					85
					90
					95
					100

					105
					110
					115
					120
					125
					130
					135
					140
					145
					150
					155
					160
					165
					170
					175
					180
					185
					190
					195
					200

					205
					210
					215
					220
					225
					230
					235
					240
					245
					250
					255
					260
					265
					270
					275
					280
					285
					290
					295
					300

15. OXYGEN IN THE AIR

Air is not just one substance, it is a mixture mainly made up of nine different gases and water vapour. Nearly 21% or roughly one volume in every five is oxygen, the gas upon which life on the Earth and a great many other important things depend. It is an active gas that combines very readily with many other substances. 78% or roughly four volumes in every five are nitrogen, a gas that would stifle plants and animals if it formed the whole of the atmosphere. About 1% of the air consists of argon, carbon-dioxide, hydrogen, neon, helium, krypton and xenon.

For a number of reasons (some of the most important are explained later) oxygen needs to be separated from the nitrogen in the air. The industrial method of doing this is to turn air into a liquid.

The process commences by taking out of the air, by using chemicals which act like a sponge, the water vapour and carbon-dioxide which would freeze and block up the machinery in the later stages of the process. An air compressor (a very powerful pump) then compresses the clean dry air to 200 times normal atmospheric pressure, i.e. 200 volumes are squashed into the space of 1 volume, giving a pressure of about 3,000 lb. per square inch. As a result of being compressed the air becomes very hot indeed. This heat is removed by water. The pressure of the air is then released and the air tends to give up heat. Because so much of its heat was removed when it was compressed it now becomes very cold indeed and finally turns into a very clear liquid at a temperature of nearly minus 200 C. (two hundred degrees below the temperature at which water turns to ice). But as air is a mixture of gases, so liquid air is a mixture of liquids. The different liquids will separately turn back into gases at different temperatures. Liquid nitrogen turns back to gas at a lower temperature than that at which liquid oxygen turns back to gas. Because of this, the nitrogen will turn into gas before the oxygen when the liquid air is heated and poured through a vessel containing a number of very special sieves. The nitrogen gas is removed from the top of this vessel and the oxygen which collects as a very pale blue liquid at the bottom of the vessel is piped away into a tank. This must be insulated to help prevent the liquid oxygen becoming warmer (as it would do very quickly in contact with the outside air) and turning back into gas. The tanks used for transporting liquid oxygen are like giant Thermos flasks. But, unlike Thermos flasks, they must not have a stopper in the top because the liquid is continuously turning back into gas. The gas takes up over 800 times as much space as an equal weight of liquid and if it could not

Understanding Science, 2, IBH Publishing Company, pp. 33 - 34.

escape the force of the expansion would quickly burst the tank. The oxygen manufacturer has to put up with the loss of oxygen from the smallish surface that is exposed to the air. It is quite convenient to transport what would be a huge volume of oxygen gas as a small tank of liquid oxygen.

The balance of life-giving oxygen in the air is maintained by plants. They produce oxygen in their food-making process. Part of it they use themselves but the remainder is released to the atmosphere and is then available for animals to breathe. In bright sunlight a pond plant, whose leaves are under water, can be seen giving off bubbles of oxygen through tiny pores in its leaves called stomata. So the oxygen in the air is constantly being renewed by the life processes of plants that are powered by sunlight.

We could not live without the oxygen in the air. We would suffocate in a sealed room as soon as the oxygen had been used up.

When we breathe air we only need the oxygen, the tissues are unable to use the other gases. Nitrogen, for example, has to be obtaind from our food in which it is usually in combinating with carbon, oxygen and hydrogen. The lining of the lungs is moist. Oxygen and small quantities of the other gases dissolve in this wetness and in solution penetrate the wet lining and pass into the small blood vessels which cover its outer side. In the blood vessels are tiny discshaped blood cells. These contain a chemical (haemoglobin) which combines only with the oxygen. The haemoglobin carries the oxygen round the body in the blood to the tissues. There it gives up its oxygen which is used to burn sugars in order to produce energy.

There is oxygen dissolved in all water. Fishes obtain oxygen from the water that flows over their gills. Even insects need oxygen, though they have no lungs. Their bodies are honeycombed with 'breathing tubes' that lead oxygen directly from the breathing holes or spiracles in their skin to the tissues.

Men who have to go up into the upper atmosphere or even up a high mountain where the air is very thin or into smoke-filled buildings, take their oxygen supply with them. It is usually carried as cylinders of compressed oxygen gas joined to a mask over the nose and mouth. High-flying jet airliners carry an emergency supply of oxygen for the passengers in a compressed form. On an 8 hour transatlantic flight 100 people would use up almost 1,000 cubic feet of oxygen - about one third as much as there is in the airliner to start with.

Hospitals use 'oxygen tents' so that patients can take the vital oxygen into their blood without exerting their muscles so much as for ordinary breathing. Where breathing has ceased altogether oxygen is given in artificial respiration.

When fuels, like coal, burn, they are simply combining chemically with the oxygen in the air and turning into new substances, the ashes and some new gasess.

A fuel can be made to burn fiercer, or faster, by feeding it with a supply of pure oxygen, for when burning in the air the supply of oxygen is diluted with other gases. This is put to good use in a number of industrial processes, one of which is oxy-acetylene cutting. The gas acetylene burns in air but in pure oxygen it burns much faster and at a very high temperature. The briliiant flame of the burning mixture of oxygen and acetylene is directed from a blowpipe over the metal, making it red hot. Then a jet of pure oxygen is played on to the red-hot surface and a clean cut is burned into the metal. The operator can follow patterns made on a steel plate very closely, in fact he can cut to an accuracy of a few hundredths of an inch. The metal plates used in ship building are cut to shape in this manner. Welding also requires great heat in order to melt the edges of the two pieces of metal which are to be joined, together with the piece of metal which completes the join. They all melt and flow into each other and upon cooling are as one structure. (Word Count - 1145)

substance	:	பொருள்
freeze	:	உறை
air compressor	:	காற்று அழுத்தும் கருவி
sieves	:	சல்லடை
suffocate	:	திணறடி, மூச்சுமுட்டவை, திக்குமுக்காடச்செய்
moist	:	சரமான
spiracles	:	வீலங்குகள் மூச்சு விடுவதற்கான துளை
transatlantic flight	:	அட்லாண்டிக்கடலில் பறத்தல்
fuel	:	எரிபொருள்
artificial	:	செயற்கையான
pattern	:	மாதிரி
blowpipe	:	ஊதுகுழல்குழாய்
atmosphere	:	வளிமண்டலம், இயற்சூழ்நிலை

ROUGH DRAFT

FAIR DRAFT

5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
95
100

					105
					110
					115
					120
					125
					130
					135
					140
					145
					150
					155
					160
					165
					170
					175
					180
					185
					190
					195
					200

					205
					210
					215
					220
					225
					230
					235
					240
					245
					250
					255
					260
					265
					270
					275
					280
					285
					290
					295
					300

					305
					310
					315
					320
					325
					330
					335
					340
					345
					350
					355
					360
					365
					370
					375
					380
					385
					390
					395
					400

16. INDUSTRIES THROUGH THE AGES

India has been famous for her handicrafts from very early times. Artistic goods of high quality produced by her skilled craftsman were in great demand in Rome, Mesopotamia, Burma and Malaysia. Indian Muslin, juwellery, articles of ivory and precious metals were exported to foreign countries.

The excavations at Harappa and Mohenjo Daro speak volumes of the artistic skill of our Indus Valley people. Their gold and silver ornaments and vessels and beautiful toys for children were noted for their workmanship. The Vedas and the Jatakas give us an idea of the progress of people in industries of those times. The guilds or srenis played an important part in promoting industries in olden days.

People engaged in a particular craft formed a guild or sreni of their own. There were different guilds (Srenis) for different crafts. There were the srenis of blacksmiths, goldsmiths, carpenters and weavers. Each guild had its own rules and regulations regarding the quality of goods to be produced. The sreni gave training to its apprentices and thus passed on the skill from generation to generation. Generally members of guild belonged to the same caste. The guilds controlled the production and distribution of goods. Some srenis were rich enough to lend money to the government and also to build and maintain temples, tanks, and schools. Fine pottery, textiles and artistic goods made of wood and metals were exported to foreign countries.

Indian handicrafts flourished till the 18th century. The native rulers and nobles encouraged these industries. But the advent of the British rule gave a severe blow to these industries. For the British took away the raw materials from India, manufactured them and sold them in India. They used India as a market for their goods. As the British goods were cheap, indigenous goods could not compete with them. So they began to decline and the artisans suffered very much.

Formerly Indian villages enjoyed self-sufficiency. They produced what they needed and consumed what they produced. But owing to the decline of our industries the villagers also had to depend on imported articles. Hence our Indian leaders urged the British to develop our industries. But the British government took only half-hearted steps to industrialise our country.

Since 1920 a number of industries like cotton, woollen, jute, sugar, paper and cement were started. The outbreak of the second world war helped the progress of our industries

as British goods could not be brought to India. But the progress achieved till independence was not adequate to meet our needs.

Since the attainment of freedom there has been considerable progress in the industrialisation of our country. The rapid growth of industries is absolutely indispensable for the removal of unemployment, poverty and misery from our land. Big factories have been set up in different part our country to produce iron and steel, locomotives, railway coaches, fertilizers, chemicals, electrical goods and other articles. Side by side with large - scale industries, small-scale industries and handicrafts are encouraged. Raw materials and machinery are imported from foreign countries for our industries. Foreign technical experts are engaged in assisting us in the task of industrialisation.

India is now on the road to prosperity. Industrialisation is going on at a rapid rate. More and more people are getting employment. Most of the goods, for which we were depending on foreign countries, are now produced in India. We are exporting manufactured goods also. Our national and per capital incomes are steadily going up. Consequently the standard of living of our people is also going up. In fact, India is fast developing into a modern and progressive country. (Word Count - 580)

handicrafts	:	சிறு கைத்தொழில்கள்
excavation	:	அகழ்வு, குடைவு, நில அகழ்வு
artistic skill	:	கலைத்திறன்
guilds	:	சங்கங்கள், வாணிகக் குழுக்கள்
flourished	:	செழிப்பாகு
indispensable	:	இன்றியமையாத
prosperity	:	செழிப்பு

ROUGH DRAFT

FAIR DRAFT

5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
95
100

					105
					110
					115
					120
					125
					130
					135
					140
					145
					150
					155
					160
					165
					170
					175
					180
					185
					190
					195
					200

17. THE WEIGHT OF ONE ATOM

Not many of the materials dug out of the ground are usable in the raw state. The 92 basic kinds of pure material (elements) have built in tendencies to join in various combinations, and did so long ago. The problem is to extract, as it were, the basic parts used in constructing a Meccano model, and to build them up into a new model that is more useful. Modern industrial civilisation only became possible when chemists had discovered how to do this.

The heap of sulphur on the right represents one of the very few substances found in Nature whose atoms are all of one kind. Sulphur is an element. There are 92 elements apart from those made artificially. The majority of substances are found as mergings of two or more elements ; such combinations are called compounds. How do elements join up with each other ? In order to split up compounds into elements and to make elements combine together into compounds, chemists have had to find out.

It has been found that when two elements merge, atoms of one join with atoms of the other. An Atom consists of a nucleus (its central core) and a number of particles called electrons. The electrons are very small indeed and whirl around the nucleus at some distance from it. They play an essential part in joining one atom to another. Two atoms combine together, If the outermost electrons are shared between both atoms, with the shared electrons moving around both nuclei. A combination of atoms like this (although it does not have to be just two atoms) is called a molecule. One page 29 there are illustrations showing an atom of carbon and an atom of oxygen, Two atoms of oxygen can be made to share their outermost electrons with an atom of carbon. The result, shown at the foot of the page, is a molecule of carbon dioxide. In joining together the atoms merge and entirely lose their individual properties. The molecule is unlike the two kinds of atoms of which it is formed.

Since the 'recipe' for carbon-dioxide is two atoms of oxygen to one of carbon we might expect that it contains twice as much oxygen (by weight) as carbon. But in fact this is not so. If we took 44 oz. of carbon-dioxide and split it up we should obtain 32 oz. of oxygen and only 12 oz of carbon. The reason is simply that a carbon atom weighs less than an oxygen atom. Practically the whole weight of an atom is concentrated in its nucleus. The nucleus of a hydrogen atom (the lightest one) is a single particle called a proton; the nucleus of any other atom is a mixture of two sorts of particles - protons and neutrons.

Understanding Science, 2, by Courtesy IBH Publishing Company Bombay.

These particles are very nearly equal in weight, the difference between them is that a proton carries a positive charge of electricity while a neutron is uncharged (neutral). The nucleus of an oxygen atom contains 8 protons and 8 neutrons making a total of 16 particles. It is therefore 16 times as heavy as the nucleus of a hydrogen atom. Since the true weight of any atom is incredibly small when measured in grams or ounces, we prefer to use an altogether different scale of weights on which the proton weights one unit; so an atom of oxygen with its 16 particles has a weight of 16 units. Carbon has 12 particles (12 units) in the nucleus of each of its atoms, it herefore has an 'atomic weight' of 12.

To provide equal numbers of carbon atoms and oxygen atom we should need to take 12 oz. of carbon for every 16 oz. of oxygen. Since the carbon-dioxide recipe calls for twice as many oxygen atoms as carbon atoms we should in fact need 2 x 16 = 32 oz. of oxygen. This would combine completely with our 12 oz. of carbon giving 32 + 12 = 44 oz. of carbon dioxide. As a further example, let us take the gas called sulpher. dioxide, which is responsible for the choking odour of burning sulphur. This compound is formed when sulphur combines with oxygen. Its 'recipe' is one atom of sulphur to two atoms of oxygen, so if we are going to make it directly by burning sulphur in oxygen we must put one measure of sulphur, with two measures of oxygen. But a measure of sulpher (atomic weight 32) is not the same as a measure of oxygen (atomic weight 16). For every 32 oz. of sulphur we need 2 × 16 = 32 ox. of oxygen to combine completely with it. The prodnct will be 32 + 32 = 64 oz. of sulphur dioxide. If too much of either oxygen or sulphur is used it will be left over, unused, at the end of the experiment.

The diagrams on the blue patch show a few of the more common atoms in a simplified form. The number of particles in the nucleus of each atom is shown on the right-hand pan of its balance. This number is its 'atomic weight' as a round number. The largest atoms are not necessarily the heaviest, the size is decided by the arrangement of the electrons.

In later articles we shall be giving tables of atomic weights. They will not always be the simple whole numbers shown by the atom pictures around this page. This is because any sample of a pure element will almost certainly contain a proporation of 'substandard' atoms (isotopes). Compared with other atoms in the same element these have either too many or too few neutrons and therefore weigh differently. (Word Count : 875)

heap	குவியல்	element	மூலகம்
sulphur	கந்தகம்	merge	இணை
illustrations	விளக்கங்கள்	receipe	மருந்து விவரப்பட்டி, மருத்துவப்பட்டி
odour	மணம்	patch	ஒட்டுப் பகுதி, ஒட்டுப் பாளம், ஒட்டுத்துணி
particle	சிறு துணுக்கு, இம்மி, அணு	choking	தொண்டையடைத்துக் கொள்ளுதல்
atom	அணு		
molecule	அணுத்திரள்		

ROUGH DRAFT

FAIR DRAFT

					5
					10
					15
					20
					25
					30
					35
					40
					45
					50
					55
					60
					65
					70
					75
					80
					85
					90
					95
					100

					105
					110
					115
					120
					125
					130
					135
					140
					145
					150
					155
					160
					165
					170
					175
					180
					185
					190
					195
					200

					205
					210
					215
					220
					225
					230
					235
					240
					245
					250
					255
					260
					265
					270
					275
					280
					285
					290
					295
					300

18. INFLUENCE OF RELIGION ON CULTURAL LIFE

The importance of religion in the life of individuals and in the development of social life is obvious for all to observe. But another type of influence of religion is not so obvious; this is its contribution to culture. Every religion in every part of the world has, directly or indirectly, enocuraged the development of philosophy, literature, architecture, painting, sculpture and music.

The scriptures of every religion expand a philosophy or way of thinking about man's existence. Scholars write commentaries and develop new schools of philosophical thought, using the scriptures as a base. The scriptures are themselves works of great literary merit, and early writers wrote mostly on religious themes.

Art and music owe a great debt to religion. Religion prompted man to build places or worship on which great care and devotion were bestowed. We thus see beautiful temples and sculptures in India, Persia, East Asia and Greece; cathedrals, paintings and sculptures in all Christian countries; mosques and other exquisite art in Islamic lands. Every age has developed new styles and desings of its own and the result has been enrichment of art. The Buddhist viharas and stupas in India and elsewhere, and the beautiful paintings in Ajanta, Ellora and Bagh are inspired by Budhism. Cathedrals, especiaily those in the Gothic styles, owe their origin to Christianity. The medieval painters of christendom and the early Renaissance artists took their subjects from religion. Islam has no place for sculptures, but its art found expression in magnificent mosques and delicate designs.

The earliest music was also religious. The hymns of the Samaveda were meant to be recited in correct pronunciation and rhythm. Hymns were written to be sung in church. The Quran is also recited in a particular rhythmic manner pleasing to the ear. From these, other music has gradually developed, which retains both its religious and secular or non-religious character. If you study the influnence of religion more closely more examples will come to mind.

In the past, followers of one religion usually looked upon themselves as worshippers of truth and upon all others as misguided people. This led to religious wars, persecution and bloodshed. Later, some readers such as Swami Vivekananda, realized that there is a basic unity in all religions. Though religions differ widely in outward practices, the essence of all religions is the same. Religions themselves do not sow discord but teach love,

sympathy and consideration for suffering humanity. Buddha, Jesus, Muhammed and religious saints of medieval India wanted to help the downtrodden. In our own times, Gandhiji called himself a Vaishnava and did his best to uplift the lower orders in society. He sacrificed his life for the sake of Hindu - Muslim unity. Understanding and appreciation of the underlying common truth of different religions help in promoting goodwill among peoples the world over.

All religions have aimed at offering solutions to the same problems that have troubled man from the earliest times. Every religion was born in a particular country and amidst peculiar social surroundings. Many religious practices were thus largely determied by the social setting in which they were born. If we can understand this and try to grasp the spiritual insight of the different religions, we will be impressed by the similarities that they offer.

With the progress of science, man has been able to explain many phenomena in nature for which his ancestors could not give any satisfactory explanation. The religious practices which were based on these natural phenomena have lost their significance. The ties of common religious practices in a community do not have the same importance now as they had when man was completely at the mercy of nature. The world today is gradually realizing that religion is a matter for the individual to decide and to follow.

If any individual wishes to enjoy certain rights, he must fulfill certain duties. He must consider that rights which are dear to him are dear to the other man as well. His conduct must be based on those ethical principles that are the common property of all religions. It is, therefore, each person's duty to know and study other religions as well as his own and look upon them with the same consideration and reverence that he shows to his own religion. Ashoka realized this 2,200 years ago. In Rock Edict XII he said "This indeed is the desire of the Beloved of the gods that persons of all sects become well informed about the doctrines of different religions and acquire pure knowledge." (Word Count -840)

Contribution	படையல்	Scriptures	புனிதநூல்
Sculpture	சிற்பம்	Bestow	கொடு
Prompt	சரியான	Renaissance	மறுமலர்ச்சி
Cathedral	மாதாகோவில்	Insight	தீர்க்கதரிசனம்
Individual	தனியாள்	Ethical	அறத்தொடர்பான
Encourage	ஊக்குவி	Observe	கடைப்பிடி
Commentaries	உரைகள்	Existence	உயிருடனிருத்தல்
Promote	உயர்த்து	Theme	கருப்பொருள்
Retain	விடாமல் போற்று	Delicate	இக்கட்டான
Consideration	பிரதிபலன்	Secular	மதச்சார்பற்ற
Influence	செல்வாக்கு	Appreciation	பாராட்டுரை
Architecture	கட்டிடக்கலை	Doctrine	கொள்கை

ROUGH DRAFT

FAIR DRAFT

					5
					10
					15
					20
					25
					30
					35
					40
					45
					50
					55
					60
					65
					70
					75
					80
					85
					90
					95
					100

					105
					110
					115
					120
					125
					130
					135
					140
					145
					150
					155
					160
					165
					170
					175
					180
					185
					190
					195
					200

					205
					210
					215
					220
					225
					230
					235
					240
					245
					250
					255
					260
					265
					270
					275
					280
					285
					290
					295
					300

19. TIME AND THE MACHINE

Time, as we know it, is a very recent invention. The modern time - sense is hereby older than the United States. It is a by - product of industrialism-a sort of psychological analogue of synthetic perfumes and aniline dyes.

Time is over tyrant. We are chronically aware of the moving minute hand, even of the moving second hand. We have to be. There are trains to be caught, clocks to be punched, tasks to be done in specified periods, records to be broken by fractions of a second, machines that set the pace and have to be kept up with. Our consciousness of the smallest units of time is now acute. To us, for example, the moment 8.17 a.m. means something -something very important, if it happens to be the starting time of our daily train. To our ancestors,such an old eccentric instant was without significance - did not even exist. In inventing the locomotive, Watt and Stevenson were part inventors of time.

Another time - emphasizing entity is the factory and its dependant, the office Factories exist for the purpose of getting certain quantities of goods made in a certain time. The old artisan worked as it suited him; with the result that consumers generally had to wait for the goods they had ordered from him. The factory is a device for making workmen hurry. The machine revolves so often each minute; so many movements have to be made, so many pieces produced each hour. Result: the factory worker (and the same is true, mutatis mutandis, of the office worker) is compelled to know time in its smallest fractions. In the hand-work age there was no such compulsion to be aware of minutes and seconds.

Our awareness of time has reached such a pitch of intensity that we suffer acutely whenever our travels take us into some corner of the world where people are not interested in minutes and seconds. The unpunctuality of the Orient, for example, is appalling to those who come freshly from a land of fixed meal-times and regular train services. For a modern American or Englishman, waiting is a psychological torture. An Indian accepts the blank bours with resignation, even with satisfaction. He has not lost the fine art of doing nothing. Our nation of time as a collection of minutes, each of which must be filled with some business or amusement, is wholly alien to the Oriental, just as it was wholly alien to the Greek. For the man who lives in a preindustrial world, time moves at a slow and easy

---

Higher Secondary English Selections, by Courtesy West Bengal Council of Higher Secondary Education.

pace; he does not care about each minute: for the good reason that he has not been made conscious of the existence of minutes.

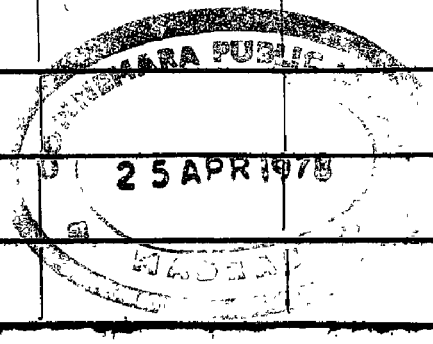
This brings us to a seeming paradox. Acutely aware of the smallest constituent particles of time - of time, as measured by clock-work and train arrivals and the revolutions of machines - industrialized man has to a great extent lost the old awareness of time in its larger divisions. The time of which we have knowledge is artificial, machine-made time. Of natural, cosmic time, as it is measured out by sun and moon, we are for the most part almost wholly unconscious. Pre-industrial people know time in its daily, monthly and seasnal rhythms. They are aware of sunrise, noon and sunset; of the full moon and the new; of equinox and solstice; of spring and summer, autumn and winter. All the old religions, including Catholic Christianity, have insisted on this daily and seasonal rhythm. Pre-industrial man was never allowed to forget the majestic movement of cosmic time.

Industrialism and urbanism have changed all this. One can live and work in a town without being aware of the daily march of the sun across the sky; without ever seeing the moon and stars. Broadway and Piccadilly are our Milky Way; our constellations are outlined in neon tubes. Even changes of season affect the townsman very little. He is the inhabitant of an artificial universe that is, to a great extent, walled off from the world of nature. Outside the walls, time is cosmic and moves with the motion of sun and stars. Within, it is an affair of revolving wheels and is measured in seconds and minutes - at its longest, in eight-hour days and six-day weeks. We have a new consciousness; but it has been purchased at the expense of the old consciousness. (Word Count - 700)

invention	:	கண்டுபிடிப்பு
by-product	:	இயந்திரத் தொழிலில் கிடைகும் இடை விளைபொருள்கள்
synthetic perfumes	:	செயற்கை நறுமணச் சரக்குகள்
aniline dyes	:	கீலெண்ணெயிலிருந்து கிடைக்கும் சாயப்பொருள்கள்
chronically	:	காலவரையறைப்படி
ancestors	:	மூதாதையர்கள்
eccentric	:	நடுவிலிருந்து விலகிய
entity	:	குறிப்பிடத்தக்க ஒன்று
unpunctuality	:	நேரம் தவறுதல்
psychological torture	:	உளவியல் சித்திரவதை
oriental	:	கீழ்த்திசைக்குரிய, கீழ்நாட்டார்
alien	:	அன்னிய
paradox	:	முரண், முரணுரை
cosmic time	:	இயல் அண்ட நேரம்
constellations	:	விண்மீன்கள்

ROUGH DRAFT

FAIR DRAFT



					105
					110
					115
					120
					125
					130
					135
					140
					145
					150
					155
					160
					165
					170
					175
					180
					185
					190
					195
					200

					205
					210
					215
					220
					225
					230
					235
					240
					245
					250
					255
					260
					265
					270
					275
					280
					285
					290
					295
					300