CONTENTS

UNIT-I

PRINCIPLES OF DEVELOPMENT

You have already studied about the meaning, differences and stages of growth and development in class IX, under chapter 3. Unit VIII "Growth and development". Now in unit I of this text-book you are going to learn in detail about the principles of development," which is common for all children even though there are individual variations.

There are certain things which greatly affect human development. These are regarded as the principles of development. The principles of development common in all children are :

1. *Development occurs at different rates for different parts of the body;*
2. *Development progresses from the head to downwards. For example, skin sensitivity comes in the uppermost parts of the body before it appears in the lower;*
3. *Development goes from general to specific responses. For example, the infant first tries to move his entire body in order to reach an object. Gradually he learns to raise his hand;*
4. *Each developmental stage has certain characteristic traits;*
5. *Every child passes through each of the several major stages of development;*
6. *The child develops as a unified whole. His intellect is related to his physical well being. That is an individual with higher intelligence is superior in body build, and height;*
7. *The development of a child is predictable. The teeth provide an example of the predictable pattern of physical development. The lower teeth erupt before the upper and the biting teeth before the molar which are used for chewing;*
8. *Development is similar for all. For example, the baby stands before he walks and before standing he learns to sit up ;*
9. *Child growth is a continuous process. It is both quantitative and qualitative. A child's digestive tract is an illustration of this example. Growth in size permits a larger intake at a single feeding;*
10. *There are periods of accelerated growth and decelerated growth. During infancy and early childhood years, growth is rapid and during late childhood years, the growth-rate decreases.*

PHYSICAL DEVELOPMENT IN EARLY CHILDHOOD

Physical development refers to changes in height, weight body proportions of a child and motor development refers to progression of his muscle co-ordination. These two developments are inter dependent distinct features, called milestones.

"Milestones are indicators of growth and development. They are normal measures of an average child." For example, an average child can sit with support at the age of four and a half to five months. Similarly he can stand without support at the age of ten to twelve months. The knowledge of milestones is important because it helps us to measure the conditins of health of a child.

Physical Development:

At the time of birth the average weight of a child is around 2.5 kg to 3 kg. At 1 year of age the weight of the child is around 9 kg to 10 kg. After four months the weight of the body doubles than the weight at birth. By the end of 3rd year the child gains 12 to 14 kg. weight.

Height Development:

At the time of birth length of the child is 18 "to 20". Boys are taller than girls. During first 4 months the child increases in height by 3" and by 8 months it becomes 25" to 27". At one year the child is of 27" to 29". By the end of 2nd year the child becomes 32" tall. By the age of 3 years the child turns around 35" to 37" in height.

Body Build

Most babies have similar body builds, though some are fatter than others. With changed body proportion during early childhood, differences in body build become apparent for the first time in early childhood. Some children have excessively fat bodies, some have a heavy, muscular body and some have a relatively thin body.

The bones gradually harden throughout early childhood so that the chances of their becoming misshapen grow less. The muscles grow larger and stronger throughout early childhood. This makes it easier for the young child to participate in more activities with less fatigue than he did when he was a baby. At every age, boys have slightly larger and stronger muscles than girls.

Motor development:

It is known as the ability to move and co-ordinate the different parts of the body to do different skills" i.e. crawling, walking, standing and grasping or holding etc.

Motor development abilities are divided into gross and fine abilities or skills.

Gross motor skills play co-ordination of large muscles of the boy. They are those of legs, shoulder, hips and back eg. sitting, standing, walking, running etc.

Fine motor skills play co-ordination of small muscles of the body.

They are wrist, fingers, thumb eg. feeding self, picking up small objects or things with fingers and thumb etc.


Holding of head

0-3 months:

At birth the child can't hold his head. After two months he can hold his head for a short while. He raises his chest when lying on abdomen. After 3 months, the child can hold his head for a larger period.


Sitting

4-6 months:


Standing

At the age of four and a half to five months the child can sit with the support.

At six months he can sit without support. He tries to reach out to objects by pushing his whole body towards them. This is the starting of "crawlong".


Crawling

7-9 months:


Holding Chips

At six to seven months the child tries to crawl, and 8 to 10 months he can easily craw with the help of his legs and arms while holding back the abdomen.

At the age of 7-8 months the child can stand with the support of some furniture or both the hand held by someone. At 9 months he can stand without support he can stand without support. He can pick small objects, peas or chips from his finger and thumb.

He can hold a spoon and tries to eat with it.

Walking

10-12 months:

The child stands without support. He is able to walk. He masters the newly acquired skills of legs and hands.

Climbing stairs

1-2 years.

At the age of 13 to 14 months the child starts climbing stairs. He uses hands and legs in climbing stairs. Around 2 years of age, the child is able to climb and descend the stairs.

Playing with ball

At 2 years old, he can jump, run and play. He can throw ball or thing but cannot catch a ball.

Two years old child can do the following things:

(i) He can drink water by holding the glass without spilling it.

(ii) He can feed himself with a spoon.

(iii) He can play with ball and blocks.

2-3 years:

At this stage motor development of the child is more specifie with finer skiller. The child now can do the following activities:

i. Holding of pencil

ii. Drawing of lines

iii. Dancing at music

Holding of Pencils

Dancing to music

Handling tricyles

iv. Combing of hair

v. Handling tricycle

vi. Opening and shutting of boxes.

SOCIALIZATION IN EARLY CHILDHOOD

Socialization means gaining of ability to behave according to others expectation. It is a gradual process and closely related to other developments like physical, emotional etc. The child learns to behave with others slowly and slowly.

Early childhood is also known as the "pre-gang age", the time when children are trying to gain necessary training to become a member of a gang, and also learning the foundation of social behaviour.

The kind of social relation the child has during this period is very important for future social contact. If he enjoys being with others, his thinking and feeling will be more favourable. Furthermore, these social relationships will determine the way in which the individual will handle his social behaviour in future.

As the social world of young child expands, he gradually outgrows his parental attachment. Children become more interested in the relationships with individuals outside the family circle.

The young child's successful relationship outside his home surrounding is influenced by the type of relationship he has had at home. Children who have been brought up in a family where all members of the family share equal right make better social adjustments outside home than those from an authoritative home environment where children are not given equal right.

The child's position in the family, whether he is the first born, last born or only child and the type of relationship he has with his siblings also influence his behaviour outside home.

Children under three years of age show a definite social interaction with other children. Thereafter a marked increase occurs in the social interaction. The period from three to six years of age is known as the most important stage in the childs socialization.

Some of the different forms of behaviour which appeared in the process of socialization are given as :

Imitation

The models for the earliest forms of imitation are parents. The child imitates their speech, actions and everything. Later, when he begins to show an interest in other children, he identifies himself with the group and imitates those whom he admires. When a young child has a close relationship with an older sibling, that sibling becomes a model whom the young child tries to imitate in every possible way.

Quarrelling

Quarrelling generally starts in a conflict over property such as toys. Quarrelling between siblings at home is common during early childhood. Improved social adjustments bring about a decrease in the number of quarrels. Boys are more quarrelsome than girls.

Non-co-operativeness

As young children are self-centred and quarrelsome there is little co-operativeness in their play with other children. By the end of the third year however play and group activities begin to develop and are more frequent and longer in duration.

Selfishness

Selfishness reaches its peak between the fourth and sixth years. As the young child was the center of attention during the early part of his life, the young child wants everything his way. As he grows older and learns to play with other children, selfishness gradually becomes weaker and begins to be more generous with his possessions and is willing to share them with his play-mates.

Negativism

Negativism or resistance to adult authority reaches its peak between three and four years of age, after which there is a rapid decline. The negativistic child usually becomes co-operative when he has learned to enjoy and gains satisfaction from obeying the wishes of others.

Sharing

Young children discover while playing with other children that one way to win others approval is to share what they have with others. Generiosity then gradually replaces selfishness.

Rivalry

The desire to do better and competing with others is apparent as early as the fourth year of life. It begins at home and later develops in play with children outside the home. It is more often found in families where the children are of both sexes or when the mother shows a preference for one child.

COMMON INTEREST IN EARLY CHILDHOOD

'Interest' play an important role in child's life. It is the feeling that the child has when he wants to know or learn more about something. When a child sees that something will benefit him, he becomes interested in it, and thus motivates his learning. As long as the child finds something interesting and satisfying he continues to be absorbed in it.

Some common interests which are almost universal among children in the age group of 2-6 years are interest in : (1) Religion, (2) Human body, (3) Self and (4) Appearance.

Interest in Religion

Religious beliefs do not have any meaning to a young child. However he is curious about religion when he comes into contact with rituals, celebrations and prayers at home and at school. Thus his curiosity about religion is greatly aroused. He then asks many questions relating to religious matters like, "What is pooja?" "Why do we kneel and pray."" and "Why does mummy covers her head with clothes while praying ?" are a few examples of the questions children ask. Early childhood is also the "fairy-tale stage" of religious beliefs. That is why religious story have a strong appeal to young children. Stories of Hanuman, mischievous Bala Krishna attract children very much. They think of god as a person who can and will do things for their goodness and enjoyment.

Interest in the Human Body

From the age of three years, children show greater interest in their own bodies than they did earlier. This interest takes the form of comments and questions about the various parts of the body, of examining those parts of their bodies and the bodies of their play

mates. The areas that attract a young child's attention most are those connected with elimination. Young children become interested in the anatomical differences between boys and girls and want to know what these differences mean and what causes them. The clues they use to distinguish between boys and girls are the difference in clothes, hair styles, names etc. They are curious about 'germs' how they cause sickness and how medicines and food cure sickness. When a person dies, they are curious to know what happens to the body.

Interest in Self

After the helpless days of babyhood are over, many young children carry over an interest in themselves which is encouraged by the care given to them by others. This egocentrism of early childhood gives way to increased interest in peers and their activities when they begin to play with other children.

Many parents, caretakers and other adults encourage egocentrism in young children without realizing that they are doing so. This they do by talking to children about themselves, their possessions and their activities, by asking them questions relating to themselves and their activities, by commenting on their toys, clothes and other possessions, by praising on their play achievements and by asking them what they want to be when they are grown up. Indirectly, parents and other adults encourage egocentrism in young children by not telling them to share in adult work such as making beds or clearing the table after a meal and by suggesting instead that they go off to play with their toys.

There are many ways young children show their great interest in self. Some of the most common ways are looking at themselves in mirrors, examining the different parts of their bodies and their clothes, asking questions about themselves, comparing their possession and achievements with those of their playmates.

While all young children tend to be egocentric, there are certain ones whose environments encourage greater egocentism than is found in the average child of the same age level. Boys tend to be more egocentric than girls partly because they are given more privileges and partly because they sense they are often parental favourites. Children who are attractive looking, bright and alert are usually in the spotlight of attention at home. This encourage them to think about themselves more than about others.

Interest in Clothes

Young children have little interest in their appearance, but they do have a strong interest in their clothes. At an early age they discover that clothing attracts attention to themselves.

While young children are interested in their clothes in general, they are especially interested in clothes that others will see. New clothes have a special appeal to young children. They want to wear new clothes daily and thus make others notice them.

EMOTIONS OF EARLY CHILDHOOD

Everyone knows what feelings are experienced in becoming sad, happy, afraid, angry and excited. Such state have been called by psychologists as emotions. Emotions are very strong weapons in the hands of parents, teachers or any other individual. By stimulating emotions they try to influence children to their desire.

The emotions of early childhood are characterized as intense. Because the stage of early childhood is a time of imbalance when the child is out of focus in the sense that he is easily aroused to emotional outbursts. As a result he is difficult to live with. This is true of the major part of early childhood.

Although any emotion may be heightened in the sense that it occurs more frequently and more intensely than is normal for that particular individual, heightened emotionality in early childhood is characterized by temper-tantrums, intense fear and unreasonable outburst of jealousy. Part of the intense emotionality of children at this age may be traced to fatigue, from strenuous and prolonged play, from their rebellion against siblings, and eating too little for their needs.

Difference in the child's health and his environment influences the pattern of emotional behaviour established during babyhood. The child who is kept in a quiet environment and whose needs are met promptly, is less likely to suffer from intense emotional outbursts as he grows older than the child who lives in a noisy environment, with his needs unattended.

The arrival of a new baby also arouses intense emotion. The young child who has been accustomed to his mother's undivided attention may resent her pre-occupation with a new baby and show it by intense outburst of anger and jealousy. His changes from being a happy child to a tense one, is mainly from the change in his environment.

The child's sex and his position within the family also have a marked influence on his emotional behaviour. The first born child has more status to defend than the second, but hesitates to do so due to parental restriction. The second born child encouraged by parents to defend themselves are more pronounced to show-off their anger.

The emotional stress is greater for the child if his sibling is of the other sex or if there is age difference. The child whose parents expect him to measure up to the standards they set will experience more emotional tension than the child whose parents are more permissive.

During babyhood, it is possible to control the environment so that the baby will experience a minimum of the unpleasant emotions and a maximum of the pleasant. During early childhood, this can no longer be possible. The more independent the child becomes, the more situation to frighten, annoy or frustrate him. If he experiences too many of the unpleasant emotions and too few of the pleasant, his outlook on life will become distorted. Since unpleasant emotions can become habitual, steps should be taken to reduce these emotions to a minimum, by preventing fear, anger, and jealousy whenever possible. This does not mean that a young child should be protected from all unpleasant situations. It only means that prevention of unreasonable fear, jealousy and anger should be attempted. When that is not possible, attempts should be made to explain to the child why he cannot have as much attention as he may want. If he learns to tolerate frustrations when he is young he will avoid aggressive attacks on all frustrations.

QUESTIONS

A. VERY SHORT ANSWERS:

1. List any three clues which are used by young children to distinguish between boys and girls.
2. How does young child's curiosity about religion aroused?
3. Why does religious story have a strong appeal to young children?
4. What is physical development?
5. What is motor development?
6. What is the average weight of a newly born baby?

B. SHORT ANSWERS:

4. List any six principles of development.
5. How parents and other adults encourage egocentrism in young children ?
6. What are milestones and at what age a child is able to pick small objects or things?
7. Write gross motor and fine motor skills with examples.

C. LONG ANSWERS:

6. Enumerate the physical development of children in the age of 2-6 years.
7. What is socialization? Explain the different forms of social behavior which are appear

UNIT-II

ROLE OF BOOKS, MUSIC, RHYMES, GAMES, RADIO, TV AND VIDEO IN THE LIFE OF A CHILD

Role of books

Books come next to the family which transmit the social, cultural and science activities to the child. It maintains the continuity of social life by handing down tradition, experiences, customs and values of the society from one generation to the other. Books provide knowledge of science, arts, moral and cultural education which influence the personality of the individual.

Books provide the balanced sense of right and duties to the child.

It helps in the physical, mental, moral and social development of the child.

Music

Children love music that enhances their enjoyment. Normally listening to music is an amusement. Children enjoy being sung to them and listening to music on records, radio or television. This type of enjoyment/amusement increases as the child grows older.

Children like simple music, because they cannot understand a complex one and fail to hold their attention. They like music with plenty of rhythm and simple renditions. Some children may prefer singing to orchestral and single- instrumental music although for others, the reverse is true. However, they like any music, provided it is not too complex for them to understand.

Children prefer to listen to music on records than music from any source. The reason for this preference is that it enables them to listen to the favourite music of their choice repeatedly again and again.

The other advantage of listening to music on records is that they can play records while studying and playing games.

Rhyme

A good Rhyme helps the child during pre-school age and school age. Rhyme performed with rhythm and bodily movement with music gives very much enjoyment to the children.

Rhyme can also help to socialize children by encouraging co-operation with age mates while performing by singing or by dancing. Rhyme helps to memorise the things. Children are expected to memorize the words of songs of poems and rhymes. They also learn basic things and how to spell simple words within the rhyme.

Games

Game is the most creative form of learning for the child. They learn many things during games. They turn their attention to those traits which are admired by their playmates and companions. Their beliefs, attitudes, interest and habits are influenced by their playmates.

Through game the child learns about the curiosity. The child learns the use of hands and fingers so that he gains muscular control. They enjoy playing with other children and joining in group activities and games. They love to help and are learning to co-operate. They cannot enumerate what they learned but they show their feelings through game. They learned to understand rules and follow them and can express themselves in their language.

Game also help in the development of valuable social qualities like activeness, obedience, cheerfulness, politeness, kindness, co-operation, honesty, loyalty and bravery etc.

Radio

Preschool children like to listen to radio-programmes which deal mainly with animal and familiar people during popular programmes. They like simple music whether vocal or instrumental. They also like to listen children's programme.

By the age of 6 years, children begin to lose interest in children's programme. They now want programme that are more exciting and entertaining.

The favourable effects of radio listening are listed as follows :

a) It offers children a form of entertainment within the home and thus keeps them with the family.

b) It increases children's knowledge about history geography, current events, literature and other subjects/topics.

c) It helps to improve their speech by increasing their vocabularies, improving their grammar, and giving them a good model of diction.

There may be some harmful effects on radio listening

Terrifying programmes may affect the general psychological condition of children by producing nightmares, nervous tension, loss of sleep, and poor appetite.

Children who spend much of their time listening to the radio get little exercise for normal development for a healthy physical condition. Their home-work may be pent up because they do not give enough time to their studies and do not concentrate when they are studying.

As a part of a amusement, too much time spent in listening to the radio may be regarded as a bad signal of poor personal and social adjustment.

EFFECT OF TELEVISION ON CHILDREN

(I) Physical effect

The effect of watching TV may interfere in eating and sleeping habits of the child. Therefore, digestion may be upset.

(II) Effect on school work

Now-a-days television programmes are broadcast in such an exciting and vivid way that many children feel that reading school books are no more interesting.

(III) Effect on other forms of play

Many children want to use the time available for other play activities especially the outdoor ones and always want to watch the television. It also leaves little time for creative play or different forms of amusement or passive play.

(IV) Motivated to acquire knowledge

Some children are readily motivated to follow up what they see on the television screen and try to fill up the gaps in their knowledge of the subjects.

(V) Effect on speech

Watching television may lead children to improve their speech in pronunciation and grammatical forms.

(VI) Effect on behaviour

Since children are immature they always try to imitate the actions and dialogue of the television stars. They sometime want to behave just like the TV stars.

Watching educative programme on TV may help to induce the children with school going habits.

FACTORS INFLUENCING CHILDREN'S INTEREST IN TV

Age

Pre-schoolers show greater interest in television than school-age children, who have many play interests and more playmates.

Sex

Boys spend more time watching television than girls as girls are usually busy in helping their mother in household work.

Intelligence

Bright children derive less satisfaction from television as compared to less bright age-mates and they begin to lose interest in it.

Socio-Economic status

Watching TV is more popular with children of the lower-socio-economic groups than with those of the higher socio-economic group. Because children in the lower group have fewer opportunities for other forms of play.

Academic achievements

Good academic students are less interested in television than less meritorious students. They almost regard it as a waste of time to watch TV programme.

Video or Movie

Watching video or Movies give children pleasure by taking them into a new world of people and animals doing things that they cannot do.

Movies or Video provide information about how to behave in social situations and children use this to increase their social status and social acceptance.

Events, informations and knowledge are remembered longer when seen on the screen with sound and music than in print occasionally with illustration as in books, newspapers and magazines.

In movies and videos, children find an excitement which are not found in their everyday life. They get greater excitement, more vivid than reading books and comics.

Moving pictures may have a pronounced emotional effect on children. In childhood stage, the ill effects may be expressed in nightmares, daydreams, eating and sleeping problems or nervous mannerism. But in late childhood the effects are much milder because they realize that what they see on the screen is merely a story.

Watching videos and movies for too long at one time may cause eyestrain and general fatigue. Horror movies are usually exhaustive both physically and mentally.

QUESTIONS

A. VERY SHORT ANSWERS :

1. Why do children like to listen to music ?

B. SHORT ANSWERS :

2. Mention the role of books in the children's education ?
3. Name some ill-effects of watching Video and Movies.
4. List out the favourable effects of listening to radio?

C. LONG ANSWER :

5. What are the effects of watching TV on children ?

UNIT-III

PLAY

Meaning

Play is an integral part in the life of a child. Play is an activity in which a child is engaged to do whatever he wants. Play gives satisfactions to the individual's urge for freedom of action. Children express their creative activities through play. It is marked by freedom of joy. Every child needs freedom to run and jump upto acceptable joyful level.

It seems that every child needs the feel of the wind and the Sun, the sight and the smell of the plants and trees and the available materials. All these things, a child can get through play.

Play means any activity engaged in for the enjoyment it gives without considerations of the time and end result.

Play is the young child's chief mode of interactions and development. Play is any activity done for the enjoyment it gives.

Piaget has stated that play "consists of responses repeated purely for functional pleasure:"

Needs

Play is an important medium for the moral education of the child. Through play, the child may learn to be fair, honest, truthful, self-controlled, a good sport and a good loser. Play is essential for the development of a normal well adjusted personality. It gives the child a chance to develop physical, mental, social and moral well-being. Play has therapeutic values. Play serves as an outlet of many emotions and to express his natural instincts.

In everyday life, the child needs release from the tensions and the restrictions imposed on him by his environment.

Play contributes to the healthy development of the body. While playing with all types of toys, child learns the shapes, sizes, colours, texture, numbers and qualities of the objects as well as their significance.

Play encourages the child to prepare himself for his school education. The child learns to establish social relationship by playing with other children.

Types of Play

There are different types of play suitable for young children of 2-6 years of age. But it is better to divide into two groups :

1. Active play
2. Passive play (Amusement)

1. Active Play – In active play, children get satisfaction from what they do rather than from what someone else does.

Types of Active Play:

Exploratory Play

When a child gets a toy, he tries to shake or suck it, smells and squeeze or pat. Some toys may give sounds. Young children enjoy exploratory activity. This type of play is known as exploratory play.

The young child's first interest in toys is exploratory.

Constructive Play

As children grow older, they are not satisfied with exploring toys, They now want to use toys to make simple things. Instead of throwing and chewing crayons or biting blocks, for example, young children use them to build house or bridge and want to colour pictures or to draw picture of their own or familiar ones.

Dramatic Play

It is basically an exercise of imagination. Children discover that it is fun to dramatize with the toys.

To a young child, a doll is not just a doll but a real person. Therefore they play with toys as their playmates. They think a toy telephone can be used to call up someone and talk with them and a toy gun can also shoot someone. Their room can be turn out to be a cave or a house of their desire. An important advantage of dramatic play is that it encourages the young child to speak out of his imagination.

Free – Spontaneous Play

The earliest form of children's play is free spontaneous play. This type of play is characterized by lack of rules and regulations and is for the most part solitary rather than social. The child plays as much as he wishes to play and stops playing when he is no longer interested in it. Play of this type is mostly exploratory. At first, most of the child's play is with his own limbs.

Family Games

During early childhood, children want to play more complicated games. They also want to play with their family members– parents, brothers and sisters and grandparents.

Family games give good training for play with other children. Through them, children learn that they must follow rules, wait their turn and be good loser as well as pleasant winner.

Neighborhood Games

By the age of 5-6 years of age, children begin to lose interest in family games. They want to play with their own age groups.

The children staying nearby locality join together and play games like hide and seek, follow the leader etc. As early childhood draws to close, children's games begin to copy adult sports such as basket ball, football, baseball etc.

2. Passive Play (Amusement)

In passive play, children play a passive role in amusements. The enjoyment comes from watching or listening to others.

Passive play is required when the children are tired, restless or becoming bored or just before meals or bedtime. All children should have a chance to experience different forms of passive play. Then, in time, they will be able to choose those that give them the greatest satisfactions.

Types of Passive Play

Watching others

Young children are fascinated (delighted) by watching other people. They like to watch parents and other adults doing things in and around the house. They are delighted to watch household pets, animals and they like to watch other children at play.

Children like most of the pictures of simple, everyday settings and of people doing everyday things. Bright coloured pictures in comics, books, magazines and newspaper advertisements

have great appeal for young children. Such pictures are easier to understand than pictures of things children have never seen.

Children enjoy looking at the same picture over and over again. Everytime children look at the same picture they may discover something they did not see before.

Children of 2-6 years of age can understand many words, they like to listen stories told or read to them. The story must be children's liking so that they can understand it. Otherwise there will be lack of attention and they will not enjoy it.

The storyteller often uses facial expressions to give meaning to the words. He/She should stress meaningful words, speak out slowly so that children have time to grasp what they hear and use simple words that children know. The more the teller can act out the story, the better children can understand it.

The children also like nursery rhymes and poems. The rhymes or the poems should be short and simple. It should be meaningful and easily understandable.

Looking at Comics

Most of the comics have bright coloured and simple drawings that are easy to understand. As a result, children like to look at the comic books. As a precautionary measure parents should not allow their children to see terror comics because they may experience fear.

Listening to Music

Children like to listen to simple music and sing along with the music. They are not self-conscious about their ability to sing as many older children do. They try to sing the same tune without the music. They like to imitate the famous singer's song.

Watching Television

Now-a-days most of the television stations have appropriate programmes for young children. The parents should encourage the child to see the children's programme regularly. Parents also should join the watching of television with their children so as to answer certain questions of their children. This adds enjoyment to the children.

Play materials of children of 2-6 years of age

The right play equipment help children to meet their interests, abilities and needs while playing. It also stimulates an interest in play of all types. Only if parents think about each child's needs, abilities and interests, they will be able to make a wise choice of play equipment for their children.

From the vast background of play and experience available, a list of play materials is given here which can be used as a guide while buying play materials or equipment for children of 2-6 years of age.

Play materials for 2-3 years of age

1. Interlocking block toys
2. Cloth books with pages for lacing
3. Large beads to string
4. Large crayons
5. Washable dolls
6. Wooden or plastic vehicles (autos, trucks, ambulance, fire engines etc.)
7. Blocks of assorted shapes
8. Wooden puzzles of simple and complicated type graded according to age
9. Doll bed and doll's furniture
10. House keeping toys (carpet, broom etc.)
11. Toy telephone
12. Coloured construction papers
13. Gardening tools

Play materials for 3-4 years of age

1. Hammer with pegboard
2. Ladder
3. Jungle Gym
4. Vehicles to ride in (tricycle, car etc.)
5. Musical and rhythmic toys
6. Flannel surface board and pieces of flannel and felt in different shapes and colour
7. Flexible plastic sheet and coloured cut out piece
8. Strips, squares and triangle of coloured paper
9. Large brushes for poster paint
10. Laundry equipment for doll clothes
11. Paper for painting
12. Colouring paints
13. Light weight bat and soft ball

Play materials for 4-5 years of age

1. Medium height slide
2. Plastic blocks

3. Wooden or plastic trains, cars with wheels
4. Wooden or plastic short pillars, triangle, quarter, circle, small half-circle, small bridge, blocks
5. Parts of costumes (Policeman's badge, doctor and nurse kit, handcuff, cowboy's caps etc.)
6. Black board, coloured and white chalk
7. Doll's bed and bedding etc.
8. Small wooden or plastic or soft toys
9. Working bench with desk or tables
10. Musical instruments

Play materials for 5-6 years of age

1. Doll's clothes
2. Doll's feeding sets
3. Doll's animals and vehicles
4. Doll's furniture
5. Cosmetics kits
6. Storage cabinet
7. Toy soldiers
8. Magnets
9. Magnifying glass
10. Hand puppets
11. Football, basketball, soft balls
12. Musical instruments
13. Leather craft materials
14. Puzzles
15. Interlocking small wooden or plastic blocks
16. Equipment for word building games

DESIRABLE LOCAL EQUIPMENT FOR THE CHILDREN OF 2-6 YEARS OF AGE

For outdoor play

a. Swing
b. Sliding objects
c. Rocking object (boat, horse, stands)
d. Planks and logs of wood
e. Climbing frames
f. Large pipes (for crawling)

g. Nets and rope ladders
h. Carts, barrows, push-pull toys
i. Baskets, buckets, pots, boxes
j. Soft balls
k. Dance accessories

For sand, water and earth play

a. Small containers of different sizes and shapes
b. Used cups
c. Katoris, spoons
d. Tins, utensils, and sieves
e. Wooden or rubber toys
f. Rubber or plastic tubes
g. Funnels
h. Corks

For imaginative play

a. Blocks (large and small size)
b. Dolls
c. Doll's house and house corner
d. Household articles of all types: utensils, used items, toy-size things
e. Toys-soft rubber, wooden or plastic
f. Masks of animals or people
g. Dresses or clothes

For music and dance

a. Dholak (drum)
b. Manjira
c. Bells
d. Damru
e. Ghunghru
f. Flute
g. Whistle

For clay work

a. Large earthen pot or tub
b. Clay
c. Wooden boards for working
d. Tools and sticks

For constructional work

a. Blocks of all types
b. Assemble toys
c. Constructional sets
d. Wooden pieces
e. Tools : hammer, screwdriver etc.
f. Beads
g. Shapes for pattern making

For science activity

a. Magnifying glass
b. Magnets
c. Balance
d. Measuring utensils
e. Clock, torch, bulb, jars.

CHARACTERISTICS OF CHILDREN'S PLAY

The characteristics of children's play are as follows:

a. Play follows a pattern of development
b. Play is influenced by traditions
c. Childhood play changes from informal to formal
d. Play activities decrease with age
e. Time spent in play decreases with age
f. Time spent in specific activities increase with age
g. Play is less physically active as the child grows older
h. The number of playmates decreases with age

Play follows a pattern of development

Studies of childhood play carried out by Margolin and Leton reveal that various types of play occur in a more or less regular order and at predictable times in the child's pattern of development. In this predictable pattern, toy play begins in the first year of life and reaches a peak between seven or eight years of age.

For example, for making blocks building, there are four different stages :

1. The child merely handles and carries the blocks and piles them in irregular masses
2. Construct rows and column
3. Develops pattern and techniques for building different designs
4. Dramatizes and reproduces structure

Definite pattern appears in painting, starting with scratching and scribbling, dotting with the brush at two and a half years and developing the paintings with a theme at about four years.

Play is influenced by traditions

Sometimes younger children imitate the older children's play who had imitated the play of the preceding generations. Thus, in every society of different cultures, one generation passes down to next, certain forms of play which it finds most satisfactory.

The impact of customs and religion also apparent in the fact that there are seasonal pattern in the children's play Eg. Holi, Christmas etc bring a shift of interest in the children's play. Children dramatize the celebrations of different traditions in play and depict different cultures in their painting also.

Childhood play changes from informal to formal

Whenever a child wants to play, he plays with whatever the toys he gets, regardless of time or place. Their play is informal. This type of spontaneous play is disappeared in late childhood. Gradually, play becomes more and more formal. During this stage, children feel that special clothing, special equipment, and special place for play are essential.

Play activities decrease in number with age

As children grown older, the number of play activities decreases. Because older children has less time available to play, have a greater understanding of their interest and abilities and have to give more attention to their school activities.

Time spent in play decreases with age

Children when grown up, they want to devote lesser time in playing around and to do more activities in constructive way instead of wasting their precious time.

As a part of game, a girl child always wants to clean the utensils and help her mother in cooking and washing clothes. In the same way, a boy tries to help his father in cleaning the car and gives company for family shopping etc.

Time spent in specific activities increase with age

When the children grow older and intellectually mature, they want to attend what they are doing for a longer period of time. When there is interest in an activity, they spend more time on it. A two year old for example, can attend to a play activity for an average of 5 minutes, as compared with the 15 minutes a five year old can concentrate.

Play is less physically active as the child grows older

Children engage themselves in energetic, vigorous, and active play during the pre-school and early school years. Their interest in active play reaches its lowest point during late childhood or early puberty. They spend most of their play time in day dreaming which requires only a minimum of physical efforts and expenditure of energy.

The number of playmates decreases with age

Young child may play with anyone who is available and willing to play with them. At the age of six years, children become a member of pre-gang and gang, a small selected group having common interest and their plays give them certain satisfactions.

Older children limit the number of their playmates and spend most of their time together.

QUESTIONS

A. VERY SHORT ANSWER :

1. What is active play ?

B. SHORT ANSWERS:

2. Define play. Name the classification of play.
3. Prepare a list of play materials for children of 2-3 years of age.

C. LONG ANSWERS :

4. What is active play ? Explain the different types of active play.
5. What do you mean by passive play. Discuss the types included in passive play.

UNIT-IV

MEAL PLANNING

Concept of Meal Planning

To plan meals for all the members of the family in order to provide nutritionally adequate and likeable food on time.

Meal Planning is both an art and a science. It is a science in the wise choice of foods on the basis of their nutritive value to provide optimum nutrition to all members of the family. It is an art in the skillful blending of colour, taste, flavour and texture in meals.

Food planned has to be tasty and palatable. Every housewife desires that the food prepared by her should not only provide satiety value but also give mental satisfaction.

Meal planning involves deciding what to eat at each meal. As the family's well-being and health depend on how well they are fed, the homemaker should be very careful while planning family meals. She should plan the meals to ensure that the needs of each family member are met.

NEED FOR MEAL PLANNING

1. Balanced for all members of the family

Nutritional requirement of each member of a family can be met with proper meal planning. Otherwise a meal served may be adequate for one member and inadequate for the other. The meal may be adequate for adolescent but indigestible for the old or the child. A good meal plan takes care of the nutritional requirements of all members of the family.

2. Saves times, money and energy

A housewife can save on time, money and energy by proper meal planning.

3. Saves fuel

Fuel can be saved by proper meal planning *e.g.* by boiling dal and potato together some amount of fuel can be saved.

4. Variety in meals

Variety can be added in the diet by meal planning. While planning meals for a week, a housewife can serve varied meals by selecting different food combinations for each day.

5. Control on food budget

By meal planning, budget of the family can also be controlled. While planning for a week the housewife can use food substitutes according to family budget. Thus the family will get well balanced meals.

6. Tasty and attractive food

Food can be made attractive and tasty. By adding variety to the taste, colour, texture and cooking methods monotony can be avoided and thus the members can relish the meal served.

7. Use of left overs

By planning meals leftovers can be used properly *e.g.* leftover dal and vegetable at dinner can be used in making *parathas* and petties in the breakfast.

8. Personal likes and dislikes

Personal likes and dislikes of the family members can be taken care of in meal planning by including foods of their preferences in one meal or the other.

9. The day as a unit

Since meal planning is made by keeping in mind the day as a unit, menu should be planned to meet the daily needs of the family members.

PRINCIPLES OF PLANNING A MEAL

a. Meeting nutritional requirement

A good menu is one which will not only provide adequate calories, fat and proteins but also minerals and vitamins essential for the physical well being of each member of a family.

b. Meal pattern must fulfill family needs

A family meal should cater to the needs of the different members. A growing adolescent boy may need rich food to satisfy his appetite, whereas a young child may require soft and bland diet. Pregnant women require green leafy vegetables more in their diet. A heavy worker requires more calories and B vitamins than other members of the family.

c. Meal planning should save time and energy

Planning of meals should be done in such a way that the recipes should be simple and nutritious. By using pressure cooker, time and energy can be saved.

d. Economic consideration

Any meal that is planned, if it does not satisfy the budget of the family, cannot be put into practice. The cost of meals can be reduced by using (1) seasonal foods (2) by bulk purchasing (3) substituting green leafy vegetables for fruits (4) combination of foods like cereals and pulses (which is equivalent to good quality animal protein) (5) locally available foods.

e. Meal plan should give maximum nutrients

Loss of nutrients during processing or cooking should be minimised. Sprouted grams, malted cereals, fermented foods like fermented soyabean, bamboo shoot, fermented fish, curd etc. enhance the nutrive value. Good quality protein should be included in all meals.

f. Consideration for individual likes and dislikes

The meal planned should not only meet RDA (Recommended Daily Allowance) but also individual preferences, particularly vegetarian or non vegetarian preferences. If a person does not like a particular food it can be tried in a different form or substituted by equally nourishing food.

g. Planned meals should provide variety

Generally motonous meals are not preferred, variety can be introduced in colour, texture and taste.

h. Meals should give satiety

Each meal should have some amount of fat, protein and fibre to get satiety. Meals should be planned in such a way that interval between the meals is also considered.

FACTORS AFFECTING MEAL PLANNING

Food Acceptance

Each one of us has likes and dislikes of certain food. But food tastes can be cultivated. As we move from one place to another, we can enlarge our acquaintance of food, by trying the foods of that place. It helps us to enjoy our new environment. Learning new ways of using available foods is another way of bringing variety in meal planning.

Tradition

Most of our food selection is influenced by tradition, be it national, regional or family traditions. A lot of traditional selection is based on experience, but sometimes some poor practices become part of a tradition and must dispensed with.

It is a good practice to evaluate traditional food selection in the light of knowledge of nutrition. Thus we can retain good foods habits and change those that result in poor selection.

Food Misinformation

Food is an important topic of conversation, articles in newspaper, magazines and even books. One sees and hears about it in advertisements too. Some of these informations may be useful, but *a large part of it* may not be. False ideas about food are common, as also wrong information. But many of these originate in ignorance. But as one learns about food composition one will be able to use this knowledge to guide food selection. It is one's duty to spread the knowledge gained to others so that they discard false ideas about food, which interfere with their food acceptance and health.

OTHER FACTORS AFFECTING MEAL PLANNING

Skill in Food Preparation

Skill in food preparation is an essential part of an acceptable, tempting meal. Skill in food preparation is acquired by practice. Indigenous combinations improve acceptability of foods, add to variety and thus make food enjoyable. For example, some dark green leafy vegetables have strong flavour, which can be diluted by addition of other, milder foods, or modified by addition of other ingredients. *Methi* leaves are bitter, if ground *dal* or *beasan* is added to it the bitter flavour is diluted and the mild flavour of the product is enjoyable.

Similarly addition of grated coconut or jaggery also makes the flavour of the product acceptable. It is this skill that makes the flavour of the finished vegetable acceptable. It is this skill that makes a hot soup at home more appetising than a meal at a first class restaurant. One can develop skill by observing people who perform well and by practice. It is important to try and perfect the skills acquired, until it becomes a habit.

Variety

The enjoyment of foods can be enhanced by learning ways to prepare dishes from other regions of India and foreign countries. If a new dish is prepared once a week, the monotony in meals is avoided.

Availability of Foods

It is important to study the seasonal variation in availability of foods. In each season one can find some foods from each food group. Using seasonal foods reduces cost. Some vegetables and fruits can be grown in the kitchen garden. Some foods like beans, rice, and wheat can be purchased soon after the time of harvest, when the price is reasonable, and stored for the whole year.

Home Production

If some of the vegetables and fruits are grown at home, these need to be used in meal planning. Some of the fresh condiments such as coriander leaves, curry leaves, green chilies, mint and different leafy vegetables can easily be grown at home.

In rural areas where most of the staple foods are produced at home, meal planning helps to decide realistically the amount of food the family should retain for home use, so that the needs of the family are met. It also helps to decide what vegetables and fruits can be grown economically to improve the family's meal pattern, without adding to the food cost. When fruits and vegetables are produced in excess of the family needs; the surplus can be sold.

Schedules of family members

When planning a meal pattern, one needs to think of the schedules (time-table) of the family members, meal times and the number of meals taken at home and those that are eaten away from home. If packed lunches are made for the man outside the house and children at school, the menu needs to be modified to ensure that the items can be packed and the menu is appetizing even when cold.

Time available for meal preparation, be it from children or hired help, may affect the choice of foods bought and the menu.

Family Size and Composition

The Family size affects the foods that can be served. It is known that the money spent for food per person decreases as the family size increases, when the family income remains constant. Such is the case when there are several closely spaced children in the family. As the money available to the family does not change with the size of family, a larger part of it has to be spent to meet the food needs. Staple foods such as wheat, rice, jowar are bought in larger amounts, but the amount of milk, vegetables, fruits bought may decrease. Thus the quality of the diet is lowered. In extreme cases, it may not be possible to meet the food needs of the family members resulting in partial starvation. As this happens to a large number of families, which migrate to cities in the hope of improved living conditions, it is important to emphasise the relation of family size to family's food intake and health and promote small family norms in the interest of better health and survival.

Family composition affects the kinds and amounts of foods needed and the pattern of meals served. For example, when children are below five years of age, more milk is needed, the number of meals are more, as the child cannot take large amounts at a time. As the child grows the meal pattern changes to accommodate the school hours and the need to pack lunch or snack may arise.

Adolescents in the family need more than adults, as they need large quantities of food to support growth and their activities. The food needs of the adult members will depend on how active they are. Older members of the family need lesser amounts of food, but may need change in consistency, due to faulty teeth or lack of teeth.

As festivals call for special menus, it is important to note these in making the food list.

PLANNING MEAL FOR THE FAMILY

While planning meals for the family the following points should be taken into consideration-1. Size of the family, 2. Age of the family members, 3. Activities of the members, 4. Food preferences of the different members, 5. Availability of foods, 6. Family

income, 7. Cost of food stuffs, 8. Customs, 9. Season, 10. Locality and 11. Need for preparing special diets.

Appetite, taste, growth needs, amount of exercise and food tolerance differ with age. Therefore, meals should be so planned that the same menu satisfies the nutritional needs of all the members.

The occupation of the family members, and their leisure time activities should be taken into consideration. For example persons engaged in active muscular works need more energy than those who are engaged in sedentary work.

The income of the family is another important factor in menu planning. For many families, the expenditure on food is the largest single item on the expenditure list. The lower the income, the more carefully do the meals have to be planned to meet other expenses as well. Many highly nutritive foods are available at relatively low costs. Locally available seasonal foods like mangoes, oranges, guavas, bananas, peas, carrots, cauliflowers, cabbage, mustard leaves etc. can be purchased at a much lesser cost. These foods should be used frequently in the menu in different ways, when they are in season.

The geographic location of the place and the season of the year influence the craving for certain foods. So planning of hot foods in cold weather and cold foods in hot weather is a must. Special diets based on the nutritional needs should be planned during infancy, illness, pregnancy and lactation.

In planning meals, the needs of children, pregnant women, lactating mother, members suffering from fever or diarrhoea should be taken due consideration.

FOOD REQUIREMENTS

The five food group plan permits an individual to plan a menu to achieve nutrient intakes as specified by RDA. The five groups suggested by ICMR (1991) are given below:

The five food groups and their major nutrients

Food group	Main Nutrients
1. Cereal gains and products: Rice,	Energy, Protein, Invisible fat Vitamin-B_1
Wheat, ragi, bajra, Maize, Jowar,	Vitamin-B_2, Iron, Fibre

Barley, Rice flakes	
2. Pulses and legumes: Bengal gram, Lentil (whole as well as dhals), Cowpea Peas, Rajmah, Soyabeans, Beans	Energy, Protein, Invisible fat Vitamin-B_1 Vitamin-B_2, Folic acid, Calcium, Iron, Fibre
3. Milk and Meat Products: milk,	Protein, Fat, Vitamin-B_2, Calcium
Curd, skimmed Milk, Cheese	
Chicken, Liver, Fish, Egg, Meat	Protein, Fat Vitamin-B_2
4. Fruits and Vegetables : Fruits: Mango, Guava, Tomato, Papaya,	Carotenoids, Vitamin-C, Fibre, Invisible fat, Vitamin-B_2 Folic acid,
Orange, Sweet lime, Water melon	Iron, Fibre
Vegetables : (green leafy) Amaranth, Spinach, Drumstick leaves, Coriander leaves, Fenugreek leaves, mustard leaves	Vitamin-B_2 Folic acid, Calcium, Iron, Fibre, Carotenoids
Other Vegetables : Carrots, Brinjal, Ladies fingers, Capsicum, Beans, Onion, Drumstick, Cauliflower	Carotenoids, Folic acid, Calcium, Fibre
5. Fats and Sugar : Fats : Butter, Ghee Hydrogenated fat, Cooking oils like groundnut, Mustard, Coconut	Energy, Fat, Essential Fatty acids
Sugar, Jaggery :	Energy

Balanced Diet

Health is related to the food consumed. To maintain good health, eating a diet containing the nutrients in correct amounts is essential. A balanced diet is one which contains different types of food in such quantities and proportions so that the need for calories, proteins, fats, minerals and vitamins is adequately met and small provision is made for extra nutrients to withstand short duration of leanness.

In planning balanced diet, food should be chosen from each group in sufficient quantity.

Cereals and pulses should be taken adequately; fruits and vegetables liberally; animal foods moderately and oils and sugars sparingly.

NUTRITIONAL REQUIREMENTS FOR FAMILY

Man needs a wide range of nutrients to perform various functions in the body and to lead a healthy life. During adulthood nutrients are required for the purpose of energy, for replacement of worn out tissues and maintenance of body functions. Though there is no growth during adulthood, protein is required for the replacement of worn out tissues. The nutritional requirement of other age groups is sometimes estimated from adult requirements.

1. Nutritional Requirements :

The following table gives ICMR, RDA for an adult

Table : 1

RECOMMENDED DIETARY ALLOWANCES (DAILY)

	Man			**Woman**		
Nutrient	**Sedentary**	**Moderate**	**Heavy**	**Sedentary**	**Moderate**	**Heavy**
Energy cal.	2425	2871	3800	1875	2225	2925
Protein g.	60	60	60	50	50	50
Calcium mg.	400	400	400	400	400	400
Iron mg.	28	28	28	30	30	30
Vitamin A Retinol mcg.	600	600	600	600	600	600
Beta carotene mcg.	2400	2400	2400	2400	2400	2400
Thiamine mg.(B_1)	1.2	1.4	1.6	0.9	1.1	1.5
Riboflavin mg.(B_2)	1.4	1.6	1.9	1.1	1.3	1.5
Niacin mg.	16	18	21	12	14	16
Pyridoxin mg.(B_6)	2.	2	2	2	2	2
Ascorbic acid mg.(Vit. C)	40	40	40	40	40	40
Folic acid mcg.	100	100	100	100	100	100
Vitamin B_{12} mcg.	1	1	1	1	1	1

Table : 2

ICMR CLASSIFICATION OF ACTIVITIES BASED ON OCCUPATION

	Male	**Female**
Sedentary	Teacher, tailor, barber, executive,	Teacher, tailor, executive,

	shoemaker, priest, retired personnel, land-lord, peon, post-man	housewife, nurse
Moderate	Fisher man, basket maker, potter, gold smith, agricultural labour, carpenter, mason, rickshaw puller, electrician, fitter, turner, welder, industrial labour, coolie, weaver, driver	Servant-maid, coolie, basketmaker, weaver, agricultural labour, beedi maker
Heavy	Stone cutter, blacksmith, mine worker, wood cutter	Stone cutter

Source : Goplalan, C., B.V. Ramasastri and S.C. Balasubramanian (1991). "Nutritive value of Indian foods" National Institute of Nutrition, ICMR, Hyderabad-500 007, India.

Food adequacy :

The diets of the poor are predominantly based on cereals which provide 80% of energy and some amount of other nutrients except vitamin A and C. Cereals have to be supplemented with food items like pulses, vegetables, fruits, animal products including milk and fat to make the diet more balanced and adequate in all nutrients. Such foods are consumed only in small quantities, that to infrequently by the poor and hence their diets are inadequate with respect to many nutrients, particulary vitamin A, iron and riboflavin. Only diets of high income and middle income groups in urban areas can be said to be satisfactory.

Table : 3

Gram per day dietary intake of urban (middle and slum dwellers) and rural poor based on pooled data from National Nutrition Monitoring Bureau are given below –

Ingredients	**Rural (average)**	**Urban MIG**	**Slums**
Cereals and millets	446	361	416
Pulses	32	49	33
Leafy vegetables	10	21	11
Other vegetables	48	89	40
Fruits	15	66	26
Milk	70	250	42
Fish and flesh foods	11	22	19
Fats and oils	9	35	13
Sugar/jaggery	18	31	20

Soure : Gopalan C., B.V. Ramasastri and S.C. Balasubramanian (1991) Nutritive value of Indian foods, National Institute of Nutrition ICMR, Hyderabad, 500 077, India.

The intake of protective foods like pulses, leafy and other vegetables, milk, fruits and oils are quite low in the diets of the rural and urban poor.

The production of milk, animal foods, vegetables, fruits, fats and oils are grossly inadequate to meet the needs of all the population in the country. According to the recommended nutritional standards, major thrust must be towards increasing the per capita availability of the above protective foods.

All balanced diets of the poor can be improved at least by (a) replacing a single cereal with mixed cereals, one of them being a millet (b) inclusion of at least 50 g. green leafy vegetables improves the intake of vitamin. A, iron and calcium (c) inclusion of inexpensive yellow fruits like papaya or mango and green leafy v egetables to improve vitamin A and C intakes (d) inclusion of at least 150 ml. of milk will improve intake of riboflavin and calcium besides improving protein quality of the diet. Another extra 10 g. of oil will increase energy and essential fatty acid intake. An example of low cost improved diet by modifying the existing diet as suggested by ICMR is give below :

Table : 4

Low cost balanced diet (sedentary man)

Ingredients	**Amount gm.**
Cereals	450
Pulses	40
Leafy vegetables	50
Other vegetables	60
Roots & tubers	50
Milk	150
Oil & fat	40
Sugar & Jaggery	30

Source : Gopalan, C., B.V. Ramasastri and S.C. Balasubramanian (1991), Nutritive Value of Indian foods National Institute of Nutrition ICMR, Hyderabad - 500, 007, India.

WHAT CONSTITUTES A GOOD MENU

In a good menu the foods should be properly combined, attractive and pleasing in colour, form, texture and flavour. Besides, they should give maximum satisfaction and nutritive value.

Variety, whether in combining foods or in preparing and serving them increases appetite and palatability. A pleasing combination of colours is also important. A plate of rice, vegetables salad, fish curry and fried lady's fingers will create pleasing colours.

The texture of foods is important for the palatability of foods. Soft foods should be combined with crip food, such as rice and pappads.

The form in which the food appears is important. The shape of the chapatis, puris, pakkoras, the size of the vegetable pieces or tomato or onion slices should be pleasing.

MENU

For planning the menu the following points should be considered :

1. Energy derived from cereals should be not more than 75%.
2. Whole grain cereals, parboiled grains or malted grains give higher nutrive value.
3. It is better to include two cereals in one meal like rice and wheat.
4. Flour should not be sieved for chapati as it will reduce bran content.
5. One serving of cereals is 25 g. (one chapathi, one catori rice). A day's menu may require 12 to 14 servings.
6. Minimum ratio of cereal protein should be 4:1. In terms of the grains will be eight parts of cereals and one part of pulses.
7. One serving of pulse is 25 g. (one catori of dal). Two to Three servings should be taken.
8. One serving of vegetable is 75 g. Green leafy vegetables can be taken more than one serving if fruit is not included in the diet.
9. It is better to serve the fruit raw without much cooking or taking juice out of it. Everyday diet should contain atleast one medium size fruit.
10. There should be a minimum milk of 100 ml/day. One to two glasses of milk or curd should be included in balanced diet.
11. Energy derived from fats or oils is 15-20% of total calories and 5% from sugar and jaggery.

12. One egg weighs around 40g. This can be served along with cereal or pulses to improve the quality of protein. Instead, one serving of poultry/fish can be included in the diet.
13. Inclusion of salad or raita not only help in meeting the vitamin requirements but the meals would be attractive and have high satiety value, due to the fibre content.
14. Fried foods cannot be planned if oil allowance is less or in low calorie diets.
15. One third of nutritional requirement- at least calories and protein should be met by lunch and dinner.
16. If possible meals should be planned for several days.
17. Usually the number of meals would be three and for very young children and diseased, number of meals can be more.
18. Ideally each meal should consist of all the five food groups.
19. For quick calculations average value of calories and protein from the same group can be taken.

THE MEALS OF THE DAY

Generally, there are three meals in a day-break-fast, lunch and dinner. Some families may include evening tea or tiffin. One third of the day's requirement should be supplied in the break fast. Since more than ten hours elapse between the dinner taken during the previous night and the break-fast in the morning. It is important to have a heavy breakfast to avoid fatigue. Then another one-third food should be served in the lunch and the remaining at dinner time. All the three meals should be planned together so that the total foods are distributed evenly.

Break-fast :

A good breakfast is essential for greater efficiency. Break fast may include the following

1) Adapted from ICMR Special Report Series 1991.

(2) Mudambi, Sumati R... Food for Fitness, Nutrition Education 2, SNDT Univ. Publication, 1971.

(3) Mudambi, Sumati R & M.V. Rajagopal, Fundamentals of Foods & Nutrition. New Age international (P) Limited, New Delhi 1990, pp.25-5.

items- a seasonal fruit like guava, papaya, ripe mango or orange, some cereal preparation, such as chapati, puri or dosai, an egg or half cup of cooked dal. Children must at least have half cup of milk or a milk product.

Lunch or dinner :

For most people, lunch is usually a lighter meal than dinner. It may include meat or fish, dal, one cooked leafy or other vegetable and a raw vegetable, fruit, and cooked rice or chapati. The same pattern may be followed for dinner also. On special occasions an item of sweets may be added to lunch or dinner.

Growing children, adolescents and adults engaged in heavy work require food in between meals. This may be a glass of butter milk, a fruit, roasted groundnut or chana or sliced bread.

Menu must be planned in terms of week. They should be flexible enough to use left over and also to take advantage of seasonal foods.

FOOD GUIDE FOR SELECTING AN ADEQUATE DIET

All the foods we use in our daily meals are divided into five groups in the food guide for India. This is presented in Table (5). The food groups are chosen because of the specific nutrients contributed by each to the total diet. Foods have been assigned to the groups on the basis of their composition. The Food Guide is designed to direct selection of foods and quantities consumed to provide by RDA, thus forming the foundation of our adequate diet.

The first column in the table indicates the food group, the second column specified the amount in one serving, and the last column indicates the minimum number of servings to be taken to meet or nutritional needs. If sufficient amounts of foods from each of the five groups are included in the day's diet, the nutrient requirements of the body will be met. Such a diet is a balanced diet, as it meets the person's nutritional needs.

Let us study each food group in detail, so that we can use the food guide as a practical tool. The food guide is presented in table (5).

Table : 5

Food guide for India

Food Group	Foods included	Size of serving	Suggested No. of servings

1.	**Cereals & Breads** The staples: rice, wheat, bajra, jower, maize, ragi & their preparations	**25 g**	**9-16**
2.	**Protein Foods**		
	Dals, legumes, nuts & oilseeds	25 g	3-5
	Milk & milk products	150g	3-5
	Eggs	1 No.	
	Fish, poultry meat	30 gm	
3.	**(a) Protective vegetables & fruits** All green leafy vegetables, orange, yellow vegetables & fruits	**50-75 g**	**1-2**
	(b) Vit. C rich Vegetables & Fruits: Amla, guava, drumstick, orange, papaya, mausambi, etc.	**50-75 g**	**1-2**
4.	**Other Vegetables & Fruits** All the remaining vegetables such as fruit vegetables, gourds, Immature beans & peas, potatoes, onions, etc. Fruits such as bananas, melons, sapota, grapes, apples, etc.	**50-75 g**	**3 or more**
5.	**Oils, Fats, Sugars**		
	Oils, ghee, butter, vanaspati	5 g	5 or more
	Sugar, jaggery, murabbas, syrups	5 g	5 or more

QUESTIONS

A. VERY SHORT ANSWERS:

1. Why is meal planning both an art and a science ?
2. Give an example of saving fuel by proper meal planing.
3. What unit is used by homemakers in planning meals for the family.
4. Which nutrients provide satiety value ?

5. Why do we emphasise variety in food preparation ?
6. Why do adolescents need more food than adults ?
7. What symptom indicates fever ?
8. What is R.D.A. ?
9. What consitutes a good menu ?

B. SHORT ANSWERS:

10. What is the concept of meal planning ?
11. What is balanced diet ?
12. Name the occupations listed under sedentary occupation.
13. What is a food guide ?
14. What food items may be included in lunch or dinner for a low income family ?

C. LONG ANSWERS:

15. Why do we need to plan meals ? Give reason.
16. State the principles of meal planning.
17. Explain the factors which affect meal planning.
18. What points should be taken into consideration in planning meals for a family ?
19. Plan a low cost balanced diet for a sedentary man.

UNIT-V

DIET IN SPECIAL CONDITION

Pregnancy and lactation are two stages of life when an adult woman's needs are increased. She has the responsibility of supporting the growth of the foetus internally during the nine months of pregnancy and later externally by nursing the infant. Since the growth needs at the commencement of life are crucial, good nutrition is a must for the expectant as well as nursing mother. A number of tissues are formed to protect and sustain the foetus. During pregnancy the mother has to meet her own needs and the needs of the growing foetus. There is additional need for the growth of other related tissues and to build-up fat stores to cushion the foetus, prior to birth, and to supply part of the energy needed for milk formation during lactation. Thus the need for all nutrients involved in tissue synthesis is increased during pregnancy.

Adolescent mothers, who have not completed their own growth, may need additional foods to met their own growth requirements. If these are not met, their health may be affected, which may indirectly affect the welfare of the foetus. If the mother's diet has been adequate before pregnancy, she may be in a better position to meet the demands of pregnancy.

No mother would like to injure the health of her baby through poor food habits. However, nutritional studies have shown that many women attend to the needs of other family members at the expense of their own needs. The situation does not change during pregnancy. Thus pregnant women are often the most poorly fed members of the family. In her effort to take care of others, she does not take time to sit down and eat. When she is very tired she is unable to eat. If the food supply is limited, she is the worst affected, as she feeds all other members and eats what is left. It is important that the family should plan the arrival of the baby so that the pregnant mother does not suffer from lack of food both in terms of amount and kind. The husband must try to ensure that the expectant mother gets the right amounts and kinds of foods, so that the health of the foetus does not suffer.

ADDITIONAL AMOUNTS OF NUTRIENTS RECOMMENDED DURING PREGNANCY AND LACTATION

Nutrient	Pregnancy	Lactation
Energy	300 Calories	700 Calories
Protein	14 gm	20 gm
Calcium	1000 mg	600 mg
Iron	40 mg	32 mg
Vitamin A	750 mcg (Retinol) or 3000 mcg (Beta Carotene)	1150 mcg (Retinol) or 4600 mcg (Beta Carotene)
Thiamine	0.2 mg	0.3 mg
Riboflavin	0.2 mg	0.4 mg
Niacin	2 mg	5 mg
Vitamin C	40 mg	80 mg

Modification of normal diet

A modification of the normal basic diet is worked out for a nursing mother. It may be observed that additional amounts of protein and energy giving foods are included in this diet. In most regions, it is customary to feed the nursing mother additional amount of fat (ghee) which supplies energy and vitamin A or some special preparations (Chicken soup, boiled vegetables, dry fish etc.), which contain sources of protein, iron, calcium and vitamin B group. It is advisable to analyze the nutritional contribution of such products, so that one can emphasize those, which help to meet the additional need for nutrients.

Factors Involved in Milk Secretion

Besides optimum diet other factors affect milk production. The mother's desire to feed the baby is a very important factor. A mother, who subconsciously thinks of nursing as an imposition on her personal freedom, or something which may affect her figure adversely, may not be able to nurse her baby. Her subconscious reaction may affect secretion of milk adversely. It is appropriate to mention that these fears are baseless. Normal lactation helps the mother to regain her natural figure effortlessly. A mother, who does not nurse her baby, may need to exercise more to avoid losing her figure than a mother, who is able to nurse her baby.

A calm, quiet life favours maximum milk secretion. Fear, worry, grief, anxiety, excitement, anger tend to retard milk secretion. While moderate exercise helps milk secretion, exessive exercise depresses it. A comfortable seat, a calm and quiet atmosphere, freedom from pre-occupations are essential during nursing a baby. Its important for the nursing mother to have a happy family, which gives her emotional support during this stage of life, which is physically and psychologically less demanding and does not impose restrictions on her personal freedom. This was well appreciated by our forefathers. The custom of sending an expectant mother to her parents and her stay with them three to six months after delivery to ensure pleasant atmosphere for the mother and child.

Nutrition During Infancy

Proper feeding of infants is necessary to ensure normal growth and development. Infancy is the period of most rapid growth when one considers the period from birth to adulthood. The foundation of future health is laid during the first year of life. Breast milk is the first and best food for the baby. It provides the nutrients needed in a proportion suited to the infant's rapid growth needs. This is a period in which the capacity of the stomach of the infant and ability to digest various foods components changes rapidly.Therefore, breast feeding is very important during this period.

Meeting Food Needs of Adolescents

The increased needs of this period can be met if increased amounts of foods listed in the daily guide are included in the diet. Boys may need to consume a lot of energy rich foods, in order to provide sufficient energy.

Girls may need to pay special attention to foods rich in protein, iron and other nutrients necessary for synthesis and regeneration of red blood cells. The girl's diet should include all foods listed in the food guide, with special attention to iron rich foods such as dals, leafy green vegetables, dried fruits and egg, liver and red meats may also be used if acceptable.

It is important for adolescents to gain appropriate weight for their height and body build. Any deviation from normal indicates some feeding problem, which must be identified and corrected with the help of a nutritionist or dietician. Checking a three day food intake record, may help in identifying the specific lack or excess and thus form the basis of a plan of action.

The Adolescent - 12-16 years

This is a stage of rapid growth and intense activity. Individual variation is also great in this age group. A number of physical, emotional and mental changes occur in this period of life. Girls mature between 11 and 13 years of age, whereas the major changes occur in boys between 13 and 15 years.

It is normal for boys to eat a lot at this age, especially if they are fond of outdoor sports. To meet their nutritional needs good planning is necessary.

Diet During 17-21 years

Growth is usually slow in this stage of life. But there is certain degree of maturation of the body tissues, which is aided by good nutrition.

It is necessary to educate this age group about the relationship between the food intake and body's needs to store up nutrients in preparation for the responsibilities of adulthood.

Diet for the old people

As we grow older, the activities of the body becomes less streneous. So food is mainly required for the maintenance of the body. The nutrient needs decrease in adulthood. The energy intake (carbohydrates) should be cut down to avoid obesity. People who have passed middle age tend to gain weight. This is because the energy needs decrease with advancing age. Therefore, the diet of older people should be low in calories and high in protective foods. One of the most satisfying types of diet is one which has high protein and moderate fat content. Such a diet will give a feeling of satisfaction and eliminate the craving for eating between meals.

The meals should be varied and interesting. Every meal should include milk, fruits, vegetables, dal and whole grain cereals.

GENERAL PRINCIPLES FOR PREPARING DIET FOR THE OLD PEOPLE

1. The sense of taste and smell are less acute in older people. These interfere with appetite of many foods. The loss of natural teeth makes it difficult to chew food properly or to eat with comfort. Consequently, there is a tendency to eat more carbohydrate rich foods which require less chewing. This leads to serious deficient intake of protein, minerals and vitamins. This should not be encouraged. Older people's diet should include more protective foods and less carbohydrate rich food.

2. Digestion in later years is affected in a number of ways. The volume, acidity and pepsin content of the gastric juice are often reduced. Fats are often poorly tolerated because the pancreatic production of lipase is inadequate for satisfactory hydrolysis. This point should be taken into consideration while preparing his meal. It is better to serve easy to digest foods.

3. The older persons tends to follow dietary patterns of his earlier years and it is indeed difficult to introduce new foods or markedly changed patterns of eating. So care should be taken to see his likes and dislikes while preparing food.

4. Many older persons have wrong belief that their food needs are little because they no longer have growth needs and because they are inactive. This should be corrected.

5. Food poorly prepared or carelessly served may be associated with lack of love and thus will be refused to eat. Therefore food should be prepared properly and served in pleasant circumstances.

6. Any plans for his diet must give consideration to the individual's income, facilities for food preparation, ability to purchase and prepare foods and social and cultural background.

7. Food should be made easy to chew. Meat, fish, vegetables and fruits can be finely cut with a sharp knife.

8. For enjoyment of meals, ease of digestion and good rest, the following points should be kept in mind while preparing and serving meals to an older person :

a) Serve colourful food attractively on a tray if eating alone.
b) Serve leisurely in pleasant surrounding.
c) Serve four or five light meals instead of three heavier meals.
d) Serve a good break fast to start the day.
e) Serve the heaviest meal at noon rather than at night if sleeping is difficult.
f) Avoid tea and coffee at night if insomnia is a problem.
g) Serve hot milk just before going to bed.
h) Fats may retard digestion. If there is discomfort avoid fatty meats, fish, fried foods, gravies and pudding.

MODIFICATION OF DIET DURING ILLNESS

Adaptations of normal diets

A normal diet may be termed as regular normal full diet. It may consist of any and all foods eaten by a person in good health-fried foods, pastries, strongly flavoured food etc., are not taboo here. Normal diet forms the basis of therapeuic diet planning. Some adaptations of the normal diets are : (1) Soft diet, (2) Liquid diet, (3) Low calorie and High calorie diet, (4) High protein diet, (5) Fat restricted diet.

Soft diet

Mechanical soft or dental soft diet requires very few changes in the normal diet. Here lack of teeth necessitates the inclusion of food that require little chewing. It is also used in acute infections, gastro-intestinal disturbances and after surgery. The diet is soft in consistency, made of simple, easily digestible food, and contains no harsh fiber or rich and highly flavoured food.

The calorie requirement of the sick person may be met by adding cream to milk, butter to soup and glucose to fruit juices.

High protein diet

It should be based on normal diet. If possible, 80 percent of the increased protein should be obtained from animal sources. While planning meals, the patient's likes and dislikes, tolerance for foods and eating habits should be kept in mind. An addtion of two cups of milk, two eggs or 55-60 gms of groundnut and 110-120 gms of meat or pulses to the normal diet will increase the protein content from 70 to 125 gms daily.

High protein diet is recommended in cases like burns or injuries where wound healing should be promoted, some diseases of liver and kidney and under nutrition.

Fat restricted diet

In fat restricted diet there should be enough of the other nutrients to maintain normal nutrition. The fats included shall be of highly emulsified and readily digestible form such as, cream, egg yolk, curd etc.

In case where servere fat restriction is needed, egg and butter may be omitted. Skimmed milk may be served instead of whole milk. Such a diet should be supplemented with vitamin A and other nutrients. Fat restricted diet is recommended in the dietary treatment of obesity, diseases of the liver and gall bladder.

High calorie diet

It is given in feverish conditions. Fever is due to disturbance in the normal balance between heat production and heat loss. High calorie diet should fulfil the increased needs for proteins, vitamins and minerals.

In case like typhoid fever as the patient cannot eat large amounts of food, high calorie diet is given through sugars and fats in the diet.

To a tuberculosis patient, high calorie diet should be given through protective foods, like milk, butter, meat, eggs, whole grain cereals, fruit and green and yellow leafy vegetables.

Fluid diet

Fluid diet is used in high fever, post-operative or whenever the patient is unable to tolerate solid foods. Whenever an acute illness or surgery produces a marked intolerance for food, clear-fluid diet is advised. The patient is given tea, coffee, lemon juice with sugar, fat free broths, cereal water etc. Strained fruit juices, plain gelatin may also be given. Full fluid diet is indicated when the patient is acutely ill or is unable to chew or swallow solid food. It is free from cellulose and irritating condiments and spices.

Low calorie diet

Excessive weight is closely associated with many diseases such as cardiovascular, and renal diseases, diabetes, degenerative arthritis, gout and gall bladder diseases. The obese frequently have elvated blood cholestrol and reduced carbohydrate tolerance.

Obesity is invariably caused by an intake of calories beyond the body's need for energy. But it must be remembered that there could be other reasons also, especially genetic factors and metabolic abnormalities. Before a diet is prescribed for weight reduction, one needs a through physical examination, a dietary history and an investigation of habits related to activity, rest, and famiy and social relationships.

It must be remembered that a mere reduction in calories will not affect weight reduction. Increased activity, proper choice of foods are necessary for a nutrionally sound weight reduction programme. The diet prescribed should enable or bring about a steady loss of weight, establish good habit and promote a feeling of well-being. In order to achieve a loss of 2-3 kilogram of weight per month, a diet that provides 800-1000 calories below the daily requirements is recommended. Most diets prescribed provide about 1200 to 1600 calories per day. Protein intake is increased in these to improve satiety value of diet, so 1.5 gm. protein per kilogram of body weight. About 70-100 gms. of protein need is to be provided daily.

Fat and Carbohydrates intake is restricted. Minerals and Vitamins are less restridcted, and usually multi-vitamin prepration, iron, salts, and possibly calcium are prescribed.

High Calorie diet (Underweight)

Underweight results when the energy intake does not fully meet the energy requirement. This usually occurs in people who are very active, tense and nervous, and who get too little rest. Other causes for underweight are irregular food habits and poor selection of food not providing sufficient calories. Pathological conditions such as fever, gastro-intenstinal disturbances and hyper thyroidism may also prove to be causes of underweight. Psychological factors not only contirubute to overeating, but also to eating too little food, especially with mentally ill patients where servere weight loss results.

A high calorie diet is recommended with regard to energy, approximately 500 calories in excess of the daily needs should be provided. Diet providing 3000 to 3500 calories will bring about effective weight gain. Body fat and protein need to be replaced; so a daily intake of 100 gms. of protein is desirable. Deficiency of vitamins and minerals also occurs in underweight, so need to provide liberal amount of minerals and vitamins.

SOME RECIPES FOR THE SICK

1. Oral Rehydration Therapy with Home made solution :

For one glass of boiled cooled water one pinch of salt and one teaspoon of sugar can be added, to prepare ORS at home.

Oral Rehydration Salts solution

If the diarrhoea is prolonged and dehydration, becomes evident, it is desirable to rehydrate the child orally by administering a solution with the composition approved by the World Health Organisation (glucose 20 g. sodium chloride 3.5 g. trisodium citrate 2.9 g. or sodium bicarbonate 2.5 g. and potassium chloride 1.5 g. dissolved in one litre of safe drinking water).

It is adminstered in small sips or with a teaspoon, to prevent rapid passage of stools due to hyperactive gastro-colic reflex. Usually one year old infant needs about 1000 ml. of ORS in 24 hours.

Since children with diarrhoea develop protein-energy malnutrition, the diet should be easily digestible and nutritionally balanced. Presence of nutrients in the gut promotes absorption of sodium and water and hastens recovery of the intestinal epithelium because food in the intestine stimulates rapid cell renewal of intestinal lining.

The infant should continue to be breast fed during an attack of diarrhoea. Breast milk contains viable phagocytes and other protective substances.

2. Albumen water

White of 1 egg, water-180 ml, half a teaspoonful of sugar, a pinch of salt.

Separate the white of an egg from the yolk and whisk it without making it brothy. Now add the water which must have been boiled but must be cold. Strain with muslin cloth after seasoning.

3. Rice water

60 grams picked and washed rice and 600 ml of water.

Boil rice and water for an hour in a degchi which is covered tightly. If desired add a little cinnamom. Stir occasionally, strain and put sugar or salt to taste.

4. Sago

10 grams of sago and 500 ml of water.

Pick and clean the sago and soak in a little water. Boil about 500 ml of water in a degchi and add the sago in it. Keept it over the fire for 2 to 3 minutes and then take down the degchi. It is a light food given with milk and sugar to patients suffering from fever. If the digestion is weak it is given without milk after adding lime juice.

5. Vegetable soup

1 small carrot, 1 small potato, 1 small onion, 60 gms of peas, half teaspoonsful of salt, two pinches of pepper, 15 gms. ghee, 300 ml. water, half cup milk, 1 teaspoonful flour.

Wash and cut the carrot, potato and onion into pieces as big as the peas. Heat ghee and when very hot add vegetables, cover the degchi and allow to cook for five minutes, shaking the degchi now and then. Add water and seasoning and cook gently in the covered degchi till the vegetables are tender. Remove from the fire and strain. Mix the flour and milk together. Stir the strained soup into this and cook again for 10 minutes, stirring frequently. Serve hot in a cup.

QUESTIONS

A. VERY SHORT ANSWERS:

1. What happens if the growth needs of adolescent mothers are not met through proper diet ?
2. How much additional kilocalorie is needed during lactation ?
3. Name two foods which are needed in additional amounts during lactation.
4. Why is proper feeding necessary during infancy ?
5. What should be the proper diet for older people ?
6. Which foods should be given special attention in the diet of an adolescent girl ?

7. In which cases of illness is high protein diet recommended ?
8. Name two diseases which need fat restricted diet ?
9. What is ORS ?
10. Does mere reduction in calories affect weight reduction ?

B. SHORT ANSWERS:

11. Name the factors necessary for proper milk secretion.
12. What points will be remembered while serving to an old man for ease of digestion and good rest ?
13. In what condition is soft diet recommended ?
14. When should we recommend fluid diet ?
15. When do we need high calorie diet ?

C. LONG ANSWERS:

16. State the general principles for preparing diet for elderly people.
17. Explain any four modified diets which may be served during illness.

UNIT-VI

FOOD HYGIENE AND METHODS OF SELECTION AND STORAGE OF FOOD

Food sanitation is concerned with cleanliness in the storage, handling, preparation and serving of food meant for human consumption. A number of factors can contribute to food contamination. These include the storage room and containers, the food handlers, the equipment (utensils, knives, wooden boards) used in preparation, the tables and other surfaces which come in contact with food during preparation, the food ingredients, water, air, and the cutlery and serving dishes used in serving food. Food sanitation is an essential aspect of food preparation. It is important to ensure the cleanliness and sanitation during food storage, handling, preparation and serving.

FOOD SANITATION INVOLVES THE FOLLOWING ASPECTS

1. Maintenance of clean premises,
2. Health and cleanliness of people who handle food,
3. The provision of potable water supply,
4. Cleanliness in handling and storage of raw foods,
5. Prevention of contamination of the foods at all stages in preparation, eigther equipment or personnel.
6. Cleanliness in serving food , and
7. Safe disposal of food wastes

Inculcation of hygienic habits would help in preventing foods from being contaminated during handling.

Food Handling

Food comes into contact with human hands during harvesting, storage, preparation and serving. It is important that food handlers be free from any communicable diseases-colds, any other respiratory ailments, cuts or boils, as they may be responsible for transferring these to the food thereby spreading the infection to persons consuming the food.

Human hair, nasal discharge, skin can also be source of micro organisms. Therefore persons handling foods, must wash hands with soap before starting preparation and refrain from touching hair or wiping nose during food preparation.

Food sanitation is a way of life. It can never be over-emphasised. A number of gastrointestinal disorders, such as diarrhoea, cholera and communicable diseases such as typhoid, septic sore throat, diphtheria, dysentery etc. are communicated by use of contaminated water or food. Therefore sanitary handling of food and water properly is very important.

The presence of insects, insect fragments, rodent excreta and other matter of insect and rodent origin (even though it may not necessarily be dangerous to health) is aesthetically resented by consumers. Health authorities condemn such food as unfit for human consumption, because it indicates poor practices of sanitation where the food was prepared.

It is thus essential that preventive measures be taken to exclude the entry of insects and rodents in the house, especially in the cooking and serving areas. This can be done by-

(i) Keeping the prepared food covered in cupboards with wire netting.

(ii) Filling cracks, fissures in the walls and flooring which are usually the places where insects breed and multiply.

(iii) Covering drains, holes, etc. with wire gauze so as to prevent the entry of rodents.

Rules of hygienic handling of food

1. Before starting food preparation tie hair neatly. If necessary use hair net or cap. Also wash hands thoroughly with soap and water.
2. Before preparation wash fruits, vegetables, cereals and beans with potable water. Boil milk in a clean container soon after delivery.
3. For food preparation always use potable water.
4. To get rid of any kind of contamination boiled water should be used for drinking.
5. Clean utensils and equipment should be used for food preparation.
6. Cooked food should be kept covered, preferably in the container in which it is cooked.
7. Leftover foods if any should be kept either in a refrigerator or in a pan containing cold water.

SELECTION AND STORAGE OF FOODS

Criteria for selection

How often we purchase food depends on its storage life. Foods are classified, on the basis of their stability during storage, into non-perishable, semi-perishable and perishable foods. Let us consider the criteria used for selection of various foods prior to purchase.

Non-perishable foods

Non-perishable foods include whole grain cereals, whole and split pulses, nuts and oilseeds, sugar and jaggery.

The criteria for selection of all these with the exception of sugar and jaggery are similar.

General Criteria of selection

Whole grain cereals, dals and whole pulses (mung, peas, rajmah, etc.) are selected on the basis of their appearance, feel, colour and variety. The grains are inspected for uniform size, cleanliness, soundness of grain, absence of broken pieces, free from insect infestation, absence of inferior seeds and trash, dirt, and mud, stones and sand.

Sugar is made from sugar-cane. It is normally available in three main forms– granulated, powdered sugar and large crystals (khadi sakhar). Granulated sugar is the most commonly used sugar. Selection is made on the basis of cleanliness and absence of dirt and dust. Jaggery is also made from sugar-cane. There are two main types. One is solid, light golden in colour, and the other is soft and dark in colour. Jaggery is selected for colour and consistency needed based on intended use.

Semi-perishable foods

These include processed cereals and pulse products, roots and tubers and fats and oils.

Processed Cereals and Pulse Products

A number of processed products are made from cereals and pulses. These include wheat products, such as, cracked wheat, semolina (rawa), atta, maida, rice flakes, puffed rice (murmura), roasted chana dal etc. These are made by grinding the grain to varying degrees of fineness (various particle sizes), by roasting the whole grain or by any other method. These processes decrease the preparation time and also reduce the shelf-life of the products. While the whole grains have a shelf-life of a year or more, the shelf-life of these processed products may vary from two weeks to a few months.

Roots and Tubers

These include potatoes, sweet potatoes, onions, tapioca (cassava), colocasia (arvi), yams and many lesser known varieties of roots and tubers. In general, these should be firm, heavy, free from bruises, spots, dirt and discoloration.

Potatoes are chosen according to the recipe to be made. These should be free from sprouts, heavy in relation to size, firm, with shallow eyes and without green discoloration. The varieties which hold their form during cooking, are preferred in most preparations.

Onions

Select hard, well-shaped globes, with dry skins, free from spots and bruises.

Fats and Oils

A number of household fats and oils are available in India. The choice depends on the food preparation in which they are to be used, the family needs, the food budget and regional preference.

Oils and fats are selected for colour, clarity, characteristic aroma and absence of bad odour (rancid), dirt, dust particles, etc., in the product.

Perishable Foods

Perishable foods include plant foods like fresh vegetables and fruits, and animal foods, such as milk, eggs, poultry, fish and meat.

Vegetables and fruits are good sources of vitamins, minerals and dietary fibre,. Milk, eggs, flesh foods are good sources of proteins and B-vitamins. These foods are easily spoilt, if stored at room temperature, due to the action of enzymes and micro-organisms.

One criterion for selection of perishable foods is that these must be fresh. In practice this means milk freshly drawn, fish freshly caught from a river or sea, meat soon after slaughter, eggs just laid, vegetables just harvested from the garden and fruits just picked from the tree.

As population increases, foods have to be purchased further away from the point of production. Knowledge of quality and characteristics of foods may help one to select and purchase perishable foods.

Convenience Foods

Convenience foods are the ones that make life easy for the housewife in serving family meals at convenience. These foods are prepared, semi-cooked or fully cooked and need only warming up. Perishable foods are cleaned, trimmed, prepared and frozen to make them convenience foods.

These are :

- Bottled and canned fruits and vegetable jam, jelly, pickle, chutney, tinned fruits, cherries and fruit juices.
- Tinned fish, luncheon meat and curries. Sag, pulao, palak paneer, matar paneer etc.
- Dehydrated foods like condensed milk, khoya, instant soup powders and juice concentrates.
- Frozen foods like peas, carrots, tomatoes, bhindi and cauliflower.
- Ready to use frozen foods like cutlets kababs, salami, ham and sausages etc.
- Mixture, biscuit and waffers etc.
- Cakes, patties, pastries, bread and buns.

Convenience foods are always expensive as compared to the home-made foods. Their nutritive value is fairly good because of the improved and modern food technology.

Storage of food :

Proper storage of food is an important part of meeting the food needs of the family. It is necessary to decide about what to store and how to store after considering the space available and the shelf-life of the foods.

Cereals, dals, legumes etc. which have been dried to less than 13 per cent moisture are non-perishable if stored in a cool, dry place.

The foods, which can be stored for a week to a couple of months, at room temperature without undersirable changes in flavour and texture can be termed as semi-perishable foods. They include baked foods, roasted, popped or toasted cereals and legumes, flours and some fruits and vegetables. Most of the fresh fruits and vegetables, milk, meat, fish, poultry are perishable foods. Their storage life varies from a few hours to a few days, depending on their composition and temperature and humidity at which these are stored.

Usually cereals (e.g., wheat, rice), millets (bajra), corn (makkai), jowar, legumes, nuts, oilseeds, oil, sugar, salt, etc., are some of the foods, which can be bought in bulk and stored. The quantities stored by a family depends on size of the family and the space available for storage. It also depends on the marketing facilities available and the monetary and other resources of the family

The following table (6) shows storage life of different foods at 25^0C

TABLE 6 STORAGE LIFE OF FOODS AT 25^0C

Food Group	Non-perishable	Semi-perishable	Perishable
I	Split dals, legumes, whole, nuts and oilseeds, dry salted fish and meat	Flour of dals, roasted dals, roasted nuts and oil-seeds, eggs	Cooked dals and legumes wet-ground mixes (e.g., idli mix) milk, fresh dahi, butter-milk. khoya, cheese, meat, poultry, fish
II (a)	Nil	Nil	All foods in this group
II (b)	Pickled mango, pickled lemons and other citrus fruits	Citrus fruits- oranges lemons, sweet limes, grape fruits	Amla, guava, cashew apple, pineapple, tomato
III	Nil	Apples, apricots, pumpkin, ashgourd roots and tubers, yams, potatoes, onions.	Peas, beans, brinjals, carrots
IV	Whole cereals and millets, dry cereal products	Biscuits, cakes, rawa (suji), cereal flours, rice flakes, popped cereals	Bread, roti, chapati rice other cooked cereals
V	Sugar, Jaggery, hydrogenated fat, vanaspati, oil, ghee	Sweets	Butter, cream

Storage of non-perishable foods

Dals, whole legumes, most of the whole cereals, oilseeds, etc., can be cleaned to remove stones, sand and any other foreign matter and washed with water to remove any dust and dirt adhering to the grains. Then these may be dried in the sun. After drying the food materials should be allowed to cool, before being put in containers for storage.

Usually dry foods are stored in tins, which have tight-fitting lids. Spices and condiments are stored in bottles and pickles in glass, earthenware or porcelain containers.

Whatever the material of the container, it is important to wash it with hot water and soap and any matter adhering to it should be scrubbed with a brush or coconut fibre. Then it is should be allowed to dry, preferably in the sun. If any wiping is necessary, it should be done with a clean cloth.

Convenient Arrangements

Some houses have a separate storeroom. Some have a closet like space attached to the kitchen for storage. Some build a large storage cupboard in the kitchen itself.

Some store rooms are fitted with wall cupboards and these are convenient for storage. Others have cement shelves. If neither arrangement is in existence, wooden shelves can be made, which work well for storage.

To facilitate cleaning of the floor, it is better to have the lowest shelf about six to eight inches above the floor. The heaviest containers should be placed on the lowest shelf. Wherever two rows are placed, taller containers should be kept at the back and the smaller ones in front, so that it is easy to reach both.

Using clean ladles to remove the food from the large containers helps in getting required amount and avoides spilling.

In many homes in the city, there is no separate storeroom. So it is necessary to fit up storage shelves in the kitchen. In this situation, it is important to put the shelves as far away from the cooking areas as possible, because cooking results in heating up the air around the stove (or any other cooking device- gas or sigri). This frequent increase in temperature encourages the growth of moths and weevils in the food. Also, when air is heated, the moisture from the air is condensed, making nearby objects damp. This, too, aids the growth of moths and weevils. Therefore, the storage shelves should be located in a cool and dry corner of the kitchen.

In most rural households, cereals are stored in earthenware containers or containers made of bamboo and plastered with mud or cow-dung. These are improvised storage structures made from indigenous materials, Cereals after harvest and drying are stored in these containers and covered with dried-hay or straws. These storage structures are however susceptible to attack by rodents and consequently some losses of stored foodgrains occur. Pulses, spices, tamarind, etc., are also usually stored in earthenware pots or jugs.

Storage of Semi-perishable Foods

When cereals, dals and legumes (including groundnuts) are subject to any processing such as grinding, roasting, baking or frying, their high quality storage life is reduced depending upon the storage temperature and relative humidity.

Flour, suji, rice flakes (chewda), roasted dals, etc., which have a moisture content less than 13 per cent are stored in the same manner as cereals and pulses. Flour and Semolina (suji) spoil faster than whole grains, because the insects can use these foods more easily. When rice flakes or popcorn is made some flavour compounds are formed, which are responsible for the characteristic flavour. These are slowly lost during storage, thus these products become less palatable, as the period of storage increases. It is therefore better to use such products within a few week of production to ensure high quality.

Apples, citrus fruits, gourds and root vegetables keep well in a cool storeroom . cellar or basement. Suitable temperature for storage of these fruits and vegetables is around 15^0C. Table 7 gives optimal temperatures and relative humidity for storage of raw foods.

TABLE 7 : OPTIMAL TEMPERATURE AND RELATIVE HUMIDITY FOR STORAGE OF RAW FOODS

Product (Foods)	**Temperature (^{0}C)**	**Relative Humidity %**
Bananas	12-16	85-90
Beans, peppers	7	85-90
Cabbage, lettuce, carrots	0	90-95
Lemons	13-14	85-90
Melons	4-10	80-85
Nuts	0-02	65-70
Onions	0	70-75
Tomatoes (ripe)	4-10	85-90

Storage of Perishable foods

Foods spoil due to the action of enzymes and micro-organisms (moulds, yeasts and bacteria) in them. Actual spoilage is quite easily noticed by the presence of rancid odour flavour of fats (caused by oxidation), fermented odour of fruit or fruit juices due to yeast growth, or the appearance of mould growth on bread, chapati or cooked rice. Slime on the surface of meats, or sour taste in bland foods may be caused by bacterial action.

Low temperatures retard spoilage and other changes in the quality of perishable foods. The action of enzymes and the growth of spoilage organisms is slowed down by low temperature storage. Perishable foods include most of the fresh vegetables and fruits and animal protein foods such as milk, eggs, meat, fish and poultry.

Vegetables and Fruits

Harvesting disturbs the normal life processes, and vegetables starts losing their vitality, freshness and food value. The harvested vegetables continue to respire during transport and storage. This involves the using of oxygen, the metabolism of cell food materials, and the release of carbon dioxide, water and energy. Most of the energy is released in the form of heat. The process of respiration must be slowed during storage, by control of temperature and relative humidity. Removing the tops of radishes, carrots and onions, reduces loss of moisture, due to decrease in surface area. Peas in pods keep better than when shelled. Peas and corn become less palatable during storage due to sugar being converted to starch. It is better to buy these vegetables only in the quantity needed for immediate use. Succulent vegetables should be kept cold in a dampened cloth or in a covered ventilated container. Roots and tubers may be stored in a cool, ventilated place the storage temperature being maintained between 3 and 10^0C (38-50^0F) to keep sprouting to a minimum. Only sound vegetables should be selected and stored; even a few bruished tubers may contaminate the entire lot.

Leafy and other vegetables and fruits start ageing soon after harvest. The crispness and flavour of green leafy vegetables deteriorate as water evaporates from it. These changes related to ageing are retarded by low temperature storage.

Leafy and other vegetables tend to shrivel and become unpalatable when stored uncovered in the refrigerator. Most refrigerators provide at least one covered container called a 'crisper' for storage of vegetables and fruits. Use of plastic bags for storage of clean, dry vegetables and fruits, retards the evaporation of moisture from them.

Milk

Deterioration starts soon after the collection of milk. It is necessary to retard the changes during storage, so that there is minimum loss of quantity prior to the preparation and use. Some of the steps taken to ensure quality during storage of these foods are as follows :

Milk is normally boiled in our homes, as soon as it is brought to the kitchen and stored in covered containers. Boiling destroys spoilage organisms and also the enzymes present in milk. Thus boiling helps to store milk in good condition for 12-24 hours, at room temperature. Milk is converted to curd by adding buttermilk which contain lactic acid. The conversion to curd and buttermilk, helps to extend the storage period of milk by 24 hours. The storage life can be further extended by storage in the refrigerator. Butter and cheese are also perishable products. The storage period can be extended to two weeks, by refrigeration.

Fish, Meal, Poultry

Fresh fish, meat and poultry can be kept for short periods at temperatures just above freezing. Ground meat is more likely to spoil than roasts, chops, steaks, due to (i) the handling, (ii) exposure of larger surface to air, and (iii) equipment. Organ meats such as liver, kidney, brain are also more perishable than other cuts.

Oxidation of fats in meat produces off-flavours and oxidation of meat pigments causes discolouration. Both these undersirable changes, which can be retarded by storing meat in the coldest part of the refrigerator.

QUESTIONS

A. VERY SHORT ANSWERS:

1. What is food sanitation ?
2. Name the foods which are included under non-perishable foods ?
3. What are semi perishable foods ?
4. Which foods are known as perishable foods ?
5. How will you select fats and oils for home use ?
6. What are convenience foods ?
7. For how many hours boiled milk can be stored in good condition in room temperature.
8. Which parts of meat are more perishable ?
9. What are the causes of off-flavour and discolouration in meat ?
10. What are the reasons for losing cripsness and flavour of green leafy vegetables ?

B. SHORT ANSWERS :

11. Name the different aspects involved in food sanitation.
12. State the criteria of selection of non-perishable foods.
13. State some convenience food items which are commonly used in Manipuri households.
14. How will you store fruits and vegetables for longer period ?

15. Indicate the favourable storage termperature for the following foods –

    (a) Banana, (b) Cabbage, (c) Lemon, (d) Onion, (e) Tomato, (f) Beans.

C. LONG ANSWER :

16. List down the general criteria for the selection of non-perishable, semi perishable and perishable foods for storage.

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UNIT-VII

RESOURCE AVAILABLE TO FAMILY

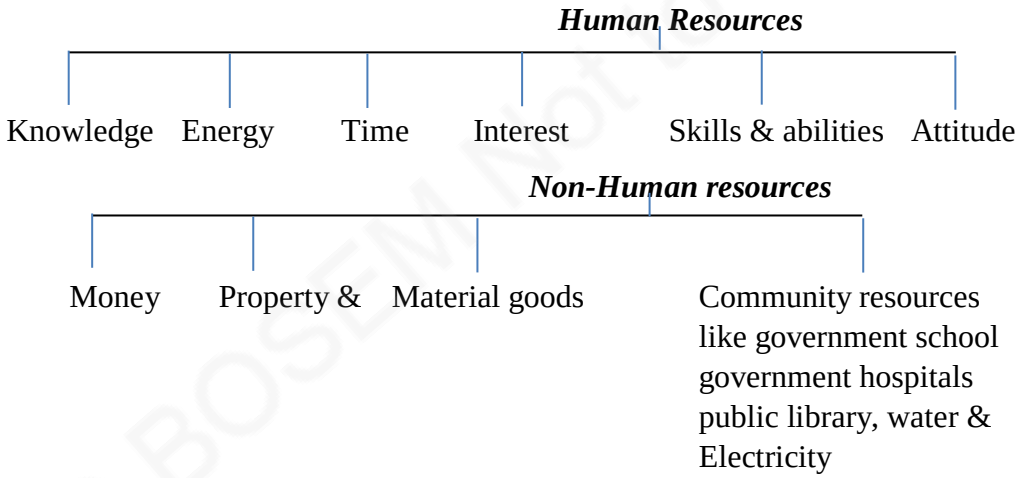
All the family members have certain needs and they work to get and fulfill their satisfaction. Needs may be of two types : Primary and Secondary. Primary needs are food, clothing and shelter. Secondary needs are education, comfort, entertainment etc. The way of getting and fullfilling these needs depend upon the availability of resources to the family and family members. These needs make us understand the family goals. All household activities revolve around achieving these goals. After attaining a goal, another one crops up. Therefore, to achieve these goals continuous efforts are made.

Resources are means that help in fulfilling the needs and attaining the goals.

Resources are an integral part of Home Management. By judicious and economical use of available resources a housewife can manage her home properly.

There are two types of resources

Human resources are



Human Resources

1. Knowledge

Knowledge is a valuable resource. It is very important for an individual for doing a particular work. Doing work has no limits, it is a continuous process. A housewife who has the knowledge of food and nutrition can fulfill the nutritional requirements of the family members. A teacher must have the knowledge of the subject he is teaching. In the management of home, knowledge of time and energy saving devices, judicious spending, caring of clothes, good and nutritious food etc are very important. Knowledge helps in selection of suitable alternatives.

2. Energy

For doing various jobs physical and mental efforts are required and for this energy is required. Energy is an important resource. We need energy even for sleeping and taking rest, it is also required for proper functioning of internal body activities. It is important to manage the daily work properly and avoid tiredness and wastage of energy.

3. Time

Each day has only 24 hours. Time is one resource which is available to all equally. Within these limited 24 hours we need to perform day to day activities–cleaning, cooking, feeding, nursing, teaching, dressing, entertaining, pursuing hobbies and many more. Time is limited and it cannot be regained if not properly used. In order that our work is finished on time, and properly, we must learn to make the best possible use of our time. Proper management of the home depends upon proper use of time. A housewife can find time for a job after completing her daily household work by proper management of time. If the housewife wastes her time in gossiping or sleeping, she cannot manage even her daily household work. Keeping the importance of time in mind, our goal should be its proper utilisation. For its proper utilisation we should make a time plan.

4. Skills and Abilities

Skills and abilities of family members are also a resource to the family. All the family members are not capable of doing all the jobs. If a family member can do minor repairs of electrical appliances this saves money. Similarly stiching, knitting etc. may save money. The housewife may decorate her house with ordinary things, may cook nutritious food, take care of the family members.

5. Attitude

Positive attitudes help in attaining goals and negative attitudes are a hindrance. Accepting changed circumstances and being optimistic is a positive attitude. The management of home is affected by the attitude of the family members.

6. Interest

Interest motivates us to perform and helps in achieving goals easily and quickly. Ability, capacity and motivation generate automatically if one has interest in specific work. If there is no interest, goal cannot be achieved even with the availability of resources like time, money, capability and knowledge etc.

NON HUMAN RESOURCES

1. Money

Money is needed for purchase of goods. Some people have money in abundance while some other have less money. But within the available money we have to meet our requirements. Salary, savings, bonus, interests etc. are part of the money income. It is a limited resource one should spent judiciously.

2. Property

Property like house, T.V., Refrigerater, car, furniture, jewellery, clothes etc. are movable and immovable property. All these are material goods and are purchased by money.

3. Community Resources

All the facilities provided by the government like public parks, public library, government schools, government hospitals, water and electricity etc. are community resources. These community facilities are meant for all the citizen and people do not have to spend money on them except payment as fees, taxes etc.

General characteristics of resources

1. The availability of resources to family varies. A family may have flowing income and some other may not have these facilities.

2. A family may have skills and money and another family may have only money but no skills while some other families may have only skills.

3. All resources are useful. A particular resource which is useful for one person may not be useful for other. The amount of resource which is useful for a family depends upon the requirements and the knowledge of the resource.

4. Resources can replace each other. Time can replace money or vice versa. If needs arise we can buy food from the market instead of cooking at home to save time and energy. Money can be replaced by time, skills and energy by doing repairing works by own family members.

5. All resources are limited. The management of resources is very essential because human desire is unlimited but resources are limited. Limitation of resources are of two types.

(a) Quantitative Limitation

Time is a limited resource. We have got only 24 hrs a day. But the demand for the time varies from family to family. Physical capabilities are also limited to some extent. We can not work beyond our capacity. Abilities are also limited in the absence of interest. People have limited money but it can be enhanced by hardwork and proper savings.

(b) Qualitative Limitation

The management of resources are affected by the quality of goods. A housewife can raise her family standard if she spends economically. A family may have attractive and durable decorative accessories whereas another family may have such things but may lack in both these qualities.

6. Resources are seldom used singly. It is wrong to think that money alone is enough to buy a household item. Knowledge about the product, skills in choosing, time, energy etc. are equally important in doing the task.

7. Resources can be saved by proper planning in the kitchen which can lead to saving of time and energy while cooking. Stiching own clothes at home instead of sending them to a tailor can save money. Taking meals at restaurants or buying from market everyday instead of cooking at home is wasting money.

8. Resources of the family can be increased. If a member of the family knows stitching, he not only can save money by stitching the clothes of the family, but can also earn money by stiching clothes for others. A portion of the house can be lent to fetch some rent. A kitchen garden may help to reduce expenditure on green vegetable.

Wise use of resources

In order to use resources wisely or to achieve maximum satisfaction out of the available resources we have to learn to manage them properly. Management of resources are planning, controlling and guiding the use of resources.

Management of time and energy

In order to finish our work on time and properly, we must learn to make the best use of our time and energy.

Time Management

Both time and energy are managed together. We learn to manage our time we also tend to manage our energy. When we save time we also save energy. If we take a long time to do something, we are using more energy but if the same task can finish in shorter time, we also save our energy. To make it possible we need to make a time plan.

A time plan must be practicable and flexible. While planning time in advance one must think of some of the problems one may come across while doing work and think of solutions to these problems. One must make a time plan which can easily follow and which can be changed easily in emergencies.

The following are the steps of making time plan.

1. Make a list of all the activities we have to do during a certain time, e.g. studying, washing, shopping etc.
2. Underline all those activities which have to be done at a definite time, like catching bus, going to work etc.
3. Make a time plan as given below mentioning the time needed to do each activity.
4. Fit in all the work which can be done within a short time.

Advantages of making time plan

1. One can finish all the work in limited time.
2. One can find time to rest and other hobbies.
3. One can do more work and of better quality.
4. It saves the last minute tension and confusions.

We can save time by making time plan and strictly following them, not wasting time, using labour saving equipment and doing two or three activities at the same time.

The following is a sample of time plan for a housewife who has one child and working in a school.

Time	**Activity**
4.30 am to 5 am	Wakeup, go to toilet, brush teeth
5 am to 6 am	Bath and wash clothes
6 am to 7 pm	Prepare and serve breakfast and start cooking lunch, cleaning the house

7 am to 7.30 am	Dress the child and send to school
7.30 am to 8.30 am	Finish and pack the lunch box, clean the kitchen
8.30 am to 9.30 am	Serve lunch and get ready.
9.30 am to 3.30 pm	Going and working at school
4 pm. to 5.30 pm	Help child with home work
6 pm to 6.30 pm	Rest
6.30 pm to 7.30 pm	Cook dinner
7.30 pm to 8.30 pm	Serve and eat dinner
8.30 to 9.30	Cleaning utensils and kitchen

We can save time by

(1) making time plan and following it strictly.

(2) Not wasting time.

(3) Using labour saving devices.

(4) Doing two or three activities at the same time, it is also called dovetailing.

Management of Energy

We can not go on working for all 24 hours a day. We all have limited amount of energy therefore we must learn to save energy.

We can save energy

1. By cutting down all extra movements
2. By doing the activities in a better order.
3. By using the correct posture at work.
4. By being more skilled at our work.
5. By working at a proper height.
6. By keeping things close at hand.
7. By using labour saving devices.

1. Cutting down all extra movements

After eating food, we have to help clear the table.

We pickup two or three things which we can easily carry in both our hands and take them to the kitchen. Then come back and pickup some more plates. In this way we may walk same distance atleast 10 times.

We can also clear the place by

i. First collecting all the plates and putting the smaller ones on top of the bigger ones. We can put in all the spoons on the sides and carry them to the kitchen.

ii. Next by putting all the glasses and extra bowls on a tray and take them to the kitchen.

iii. And in the end clear up whatever is left.

Thus, we move to the kitchen only 3 times by cutting down our extra movements.

Instead of wiping and drying the plates they can be allowed to dry on a plate stand.

2. Doing activities in a better order

What will happen if we clean the cobwebs and fans after sweeping and mopping a room ? The room will get dirty again.

Instead we could have done the same activities in a better order. The cobwebs and fans could have been cleaned before the floor was swept and mopped.

3. Developing skill at doing the work

A housewife has to wash dishes after a party. Let us see how she uses minimum energy. She can wash similar dishes together such as all the plates, all spoons, all glasses, all bowls and so on. This way she moves her hands smoothly in one direction. This will enable her to finish her work faster.

On the other hand, if she keeps washing dishes randomly, there will be jerks in her movements. It will take her longer to complete the work and make her more tired.

4. Using correct posture

Supposing one has to sit at a desk and work everyday but do not sit properly but bending the back all the time. The back will begin to ache and will feel too tired to do any more work. This means that the posture was not correct.

A correct posture is that position in which an activity can be done by spending the least amount of energy.

5. Working at proper heights

What happens when we sit on the floor and stitch a dress on a sewing machine placed on the floor, ironing clothes on the floor ? How long can we sit like this ?
We cannot sit for a very long time in this position because, as we have to keep bending over our work, we soon get tired and our back begins to ache.

This is because the sewing machine is not placed at the correct height and the ironing place is too low.

All things should be placed at heights that will enable us to save our energy.

6. Keeping things closer at hand

Things which we do not need very often are kept on the upper shelves of a cupboard. Those which are needed more often are kept close by so that we can just put our hand and pick them up. We save energy by placing things close at hand.

Meaning of Management

Management is a process of controlling whatever we have, to achieve whatever we want.

There are four steps of management :

1. Planning
2. Organising
3. Implementing
4. Evaluating

Step 1. Planning

A simple way to plan is to make a list of all the things. Certain things have to be list first and arrange these in a sequence. This step is of thinking in advance what needs to be done. We have to make the plan flexible. Thus planning is listing activities, sequencing activities and providing flexibility.

Step 2. Organising

Organising means fixing responsibilities and assembling resources needed to carry out a plan. While planning we decide who will do what, how and when the activities are to be done etc.

After deciding we set about collecting or assembling everything for example cooking a meal. All the activities of collecting resources make up the second step of management that is organising. While assigning work to other people we must make sure that they are willing to do the activity, whether they have the ability to do it, whether they have the time to do it.

Organising ensures that all the work gets done, there is equal distribution of work, work get finished on time, and saves time.

Step 3. Implementing/controlling

It means carrying out the actual activities as planned and organised earlier.

Step 4. Evaluation

Evaluation means examining progress of plan to find out the short comings and take corrective action accordingly. Evaluation also helps to understand our weakness and mistakes so that it is not repeated in future. Evaluation is examining the steps of management to judge what went right and what went wrong. It helps in future planning.

QUESTIONS

A. VERY SHORT ANSWERS:

1. Define the term 'resource'.
2. Name the two types of resources.
3. Why proper management of daily work is important ?

B. SHORT ANSWERS:

4. Why is it necessary to manage our resources ?
5. List three human and three non-human resources.
6. What is the first step in management process ?

C. LONG ANSWERS:

7. Explain the different steps involved in the process of management.
8. What are the general characteristics of resources ?

9.How would you manage time & energy ?

UNIT-VIII

MONEY MANAGEMENT

Family income and expenditure

According to Gross and Crandall, "Family income is that stream of money, goods, services and satisfactions that come under the control of family to be used by them to satisfy needs, desires and to discharge obligations.

Whatever is "coming in" is known as "income". Income can be from a job in the form of salary, house rent, interest on bank deposits and also from skills. When one has skills to stich own dress at home or to grow vegetables at home, there is no earning. But at the same time there is a saving of money that would have spent on getting clothes stitched or buying vegetable from market. This savings adds to the income.

Income can also be from free facilities such as rent free house, free medical facilities, free education etc. Thus money earned by family member is called family income.

Family income may be managed by planning, organizing, controlling and evaluating the use of all types of income.

There are three types of family income.

They are : (i) Money income, (ii) Real income and (iii) Psyhic income.

(i) **Money income** is the purchasing power in rupees that received by the family within a given period of time, weekly, monthly etc. Family receives income in the form of wages, salary, interest, profits, rent, gifts, pensions etc. Money income is converted into goods and services required for daily living and a part is put into savings and investment.

(ii) **Real income** is the flow of goods and services. It is derived from the use of money income and effort of family members. It includes foodstuffs obtained from kitchen garden, use of the house, the automobiles and all the equipment and durable goods. Another important part of a real income is the knowledge and services contributed by the family members especially the woman homemakers. Ability of the family members to use money is also valuable. Community provides another form of real income for family use through its public schools, libraries, television and Radio programmes, parks, fire and police protection etc. The family that makes use of these facilities can increase real income markedly without any expenditure.

(iii) **Psychic income** is that flow of satisfactions that arises out of our everyday experiences derived largely from the use of money and real income and making for mental and physical well being.

Decisions regarding how to use income to satisfy the family's needs, desires and responsibilities become a major family function. Income management is a family responsibility which can cause considerable tension and worry and resultant unhappiness. on the other hand, satisfaction and accomplishment for each member of the family can be realized throughout life if income is managed with thoughtful patience, justice and understanding the needs of all. Thus the quality of income management affects individual and family achievements.

Recognition of the fact that a family passes through definite stages in its life cycle is also a guide in income management.

STAGES OF FAMILY LIFE CYCLE AND DEMAND ON INCOME

Family Stage	**Substage**	**Demand on Income**
I. Beginning	1. Period of establishment	Light to heavy
II. Expanding	1. Child bearing and preschool	Heavy
(child bearing	2. Elementary School	Light to heavy
and rearing)	3. High School	Moderately heavy
	4. College	Heaviest
III. Contracting	1. Vocational adjustment of children	Heavy
(children establish	2. Financial recovery	Light or heavy
themselves)	3. Retirement	Lightest

Expenditure :

When money is used for buying different items and services for the family, it is known as expenditure.

The following is a list of items and services on which we spend our income.

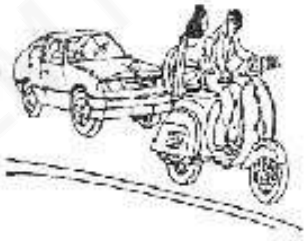
1. Food

2. Housing

3. Clothing

4. Education

5. Transport



6. Medical Expenses

7. Entertainment

8. Savings

A part of the money must be kept aside for future use. This money is called savings and may be used for any purpose such as higher education for the children, building a house, marriages old age security, illness, emergencies and to buy luxury goods.

To save some part of the total family income so that the family has some money available in times of need is ideal.In order that some money is saved we must try not to exceed expenditure than income. For this we have to make a "spending plan".

A spending plan (family budget) is like a purse in which we put our money. It is from this bag that we take out the money whenever we want to buy something.

The following are the different items on which a family spends its income:

1. Food
2. House
3. Clothes
4. Education
5. Entertainment
6. Medical expenses
7. Household expenses
8. Transport
9. Misc.
10. Savings

Given below is a model spending plan for a small family of four members. The parents and two school going children, aged 14 and 10 years. Income is Rs. 5000/- per month and stay in a free quarter.

	Item of Expenditure	**Amount in Rs.**
1.	Food	2,300/-
2.	Housing (maintenance)	200/-
3.	Clothing	500/-
4.	Education	600/-
5.	Entertainment	200/-
6.	Medical Expenses	200/-
7.	Household expenses	200/-
8.	Transport	300/-
9.	Misc.	250/-
10.	Savings	250/-
	Total	**5,000/-**

Each family has its own needs which are different from those of other families. How much each family spends on the items will depend upon a number of factors.

1. Income

How much to spend will decide by the total family income from all sources. The more the income, more will be the expenditure on various items.

2. Size of family

The extent of expenditure is determined by the number of members in a family. A large family will have to spend more on items like food, clothing etc. and will spend comparatively less for entertainment purpose.

3. Age of the family members

In a family where the children are of school going age, there will be more expenditure on education, school uniforms etc. and less will be saved. When these children grow up and take up jobs, the expenditure on their education will cease and more money will be saved.

4. Place of residence

The cost of living is higher in large cities like Delhi or Mumbai than it is in the smaller towns and villages. People living in large cities have to pay higher rent for houses. Food items are costlier and people will have to pay more to travel to their place of work. These expenses will be lower in small towns and villages.

5. Skills

The skills of different family members should also be considered. A housewife who is very good at making pickles, papads etc. will be spending less money on buying these things. If a man is good at repairing electrical equipment and other minor repairings, he will spend very little money in doing these repairs.

6. Savings

Every family has to decide how much to save each month. A family with a grown up son or daughter ready for marriage, will spend less on the other items, so that enough money is available for the marriage of the child.

In order to build a house or to pay off a housebuilding loan, the family has to shift the emphasis from spending to saving. Therefore, allocation of money for expenditure depends upon:.

Income of family, size of family, age of family members, place of residence, skills of family members and amount to be saved.

Recording Expenditure

After the family has decided how much to spend and what to spend it on one must learn to spend within that amount only.

The most practical way of doing this is to maintain a daily record of expenditure. There is a need to write down the expenditure.

By maintaining a record of expenditure one will be able to :

(1) Know exactly how much one has spent on each item.

(2) One must know if one spent more or less on a certain item than in the previous months.

(3) Identify which expenditure is unnecessary and stop spending money on those items.

(4) Predict one's money needs for the future.

(5) Save money

(6) Compare prices of products and avoid being cheated.

The following table shows how one can keep a record of expenditure for each month.

RECORD OF EXPENDITURE

Month

Item	**1st week**	**2nd wk**	**3rd wk**	**4th wk**	**Total**
Food					
1. Cereals					
2. Dal					
3. Vegetables					
4. Fruits					
5. Milk					
6. Ghee/oil					
7. Masalas					
8. Other items					
House					
1. Rent					
2. Repairs					
Clothes					
1. Readymade dress/Cloth					
2. Stitching Charges					
3. Dhobi Charges					
4. Shoe, sandals					
Education					
1. Fees					
2. Books/Pencils/Notebooks					

Medical Expenses	1st wk	2nd wk	3rd wk	4th wk	Total
1. Fees (Doctor's)					
2. Medicine					
Household Expenses					
1. Water bill					
2. Electricity bill					
3. Any other					
Transport					
1. Petrol					
2. Bus fare/other fare					
Any other items					
Total income from all sources = Rs.					
Total expenses in the month = Rs.					

QUESTIONS

A. VERY SHORT ANSWERS:

1. What are the sources of family income ?
2. Name the different types of family income ?
3. What is the demand on income at the beginning stage of family ?

B. SHORT ANSWERS:

4. What are the stages of family life cycle and its demand on income ?
5. What are the items on which a family spend money ?
6. Prepare a record of expenditure for your family for a month and compare with income.

C. LONG ANSWERS:

7. Write the factors that affect a family's spending pattern ?
8. Make a spending plan for the following family :

   A family of four consisting of the parents and two children, aged 12 and 16 years. They live in a rented house in a metropolitan city. The father gets a salary of Rs. 5000/- per month.

9. Define the term "spending plan" and explain the factors on which the allocation of money on different items depends.

SAVINGS AND INVESTMENT

Savings do not accumulate automatically. The motivation for saving money may be the desire for a specific commodity in the future; such as an automobile or a house; the desire for some future accomplishment, such as a college education for a child; or fear of future impoverishment.

Making provisions for the future is the duty not only of the housewife, but also of the head of the family, who is generally the father. It is the responsibility of the woman to save for the future.

The term 'saving' means 'refraining from spending for consumption needs'. Saving is very important from the National point of view. Savings are directly proportional to investments.

Saving can be defined as abstinence from present consumption for the purpose of future consumption. It refers to the process of keeping some amount from the current income for the purpose of taking care of future needs and wants. One of the most effective ways to build financial security is to develop a saving plan. In short, saving is a process of spending less than the income and putting the surplus in some location for the purpose of taking care of future consumption as well as for fulfilling certain specific objectives, emergency, retirement, education of children, marriage etc.

Objectives of Savings

i) Reduces economic insecurity especially in old age.

ii) Helps in the period of physical inability.

iii) Useful during emergency.

iv) Useful for children's education, marriage or other family expenditure.

v) Useful in making big purchases.

vi) Enhances socio-economic status.

vii) Helpful in securing loans.

viii) Maintains Standard of living.

ix) Becomes a source of Income– Savings can be turned into source of income in other ways too by investing it. This will be dealt with under investment. Retired persons put their savings into deposits of various kinds so that they can live on the annual interest.

Methods of Saving

Savings can be of many forms. There are different ways of saving with a Bank, Post office, Life Insurance scheme etc. Government of India have been introducing, from time to time, schemes such as National Savings Certificates, Cumulative Deposits, Provident Funds, Stocks and Bonds, Hire Purchase to buy houses, cars, etc. on a monthly instalment basis, are further incentives to saving.

Bank Account

A bank does business by taking charge of people's money and lending it to those who need it. The bank pays interest on the money it collects which are called 'deposits'. It charges interest on the money it gives called 'loans' or advances'. The interest charged on loans and advances is higher than the interest paid on the deposits and it is this difference which becomes the earnings of the bank.

Banks perform many financial functions. It gives commercial, personal, mortgage, and other types of loans. It receives deposits for savings, current and fixed deposits. It also performs other duties such as renting safe deposit boxes, issuing letters of credit and travellers cheques and the like.

By opening savings bank account families can earn some interest while at the same time able to withdraw the money as and when they want. A pass book is given to the savings depositor. All transactions such as deposits, withdrawals, credits of interest declared on the deposits are promptly recorded in the pass book. Deposits can be made at any time, but interest is calculated for a minimum period of 3 to 6 months. Withdrawals are limited to once or twice a week and often, restrictions are placed on the maximum amount that can be withdrawn at one time.

Withdrawals can be made by presenting the passbook and necessary requisition of the amount to be withdrawn. A minimum balance of Rs 1,000 should be kept in the account in case it is being operated using a cheque.

While opening a savings account there can a 'joint account' of, say, two persons so that either may operate the account or in the event of the death of one, the other may use the account.

To encourage small savings various schemes have been introduced by banks, especially for children. Savings accounts can also be opened in the name of minor children, the withdrawals can however be done only by an adult.

In order to open an account a specimen signature card must be filled in. The signature on the withdrawal slip or cheque is verified each time with the signature on the specimen signature card. Hence it is important to sign exactly in the same manner each time.

Current account

In a current account, the minimum balance to be maintained is higher. Number of withdrawals are unlimited and done by cheques issued. The rate of interest is lower than that on a savings account.

Fixed deposit account

In the case of a fixed deposit account the bank receives the money on deposit for a fixed period. In return, it pays interest (higher than that given for savings and current account, and increase with the period of deposit). The condition being that the money is not withdrawn before lapse of the stated period.

Post office saving banks

Post office saving banks were introduced before commercial banks opened as many branches as they have now. There are one of the oldest savings institutions in the country having been established over 150 year ago. While banking services are restricted to bigger towns, post offices are found even in smaller towns and hence they serve a very useful purpose in the rural areas. As post offices are more in number and spread all over the country they form convenient places for having savings accounts. Withdrawals are invariably restricted to once a week. Savings in post offices are safe since the amount are guaranteed by the State. Further, post offices offer also facilities of making cumulative time deposits and recurring deposits.

Recurring deposits

Recurring deposits can be taken for 5 years or even for other period. The greatest advantage that the Government offers through such schemes is the fact that savings and earnings coming through them is totally exempted from income tax. In recurring Deposits for a fixed period the capital and interest are paid at the end of the period.

An operation work done by Post Offices is the operation of National Savings Schemes. Any individual can buy these 'Certificates' for maximum Rs 75,000 in denomination of Rs 500, 1000, 5000. They become matured after completion of six years, i.e. the principal amount will be paid back after 6 years. The amount also accrues compound interest. If needed, the individual can surrender the certificate any time after 3 years and get back the amount.

Provident fund (P.F)

This is an attractive method of saving for persons in service. The employers deduct a specific amount every month and in some cases also add an equal amount to the account. The total amount with interest is paid to the employee at retirement. It has tax benefits also. Moreover, it cannot be taken away even by the Government in payment of dues. One can also take loans from P.F. accounts for special purposes.

Life insurance schemes

Life insurance is a contract between an individual called the insured and the insurance company, whereby the former makes a money payment each year or at a stated intervals to the latter, in return for which the latter agrees to pay a certain amount after a specific period or at the death of the insured, if it occurs earlier, to a third party named in the contract as a beneficiary. Life insurance is a provision designed in such a manner that a man, shall in his life-time make as adequate a financial provision as he can for his family in case of his death. The contract is called the policy, and the periodical payment is called premium. It is payable monthly, quarterly, half yearly and annually.

Insurance is a kind of protection against financial losses. Life insurance is for protecting a person or his family against loss of income because of the death of the insured. This type of insurance was originally devised solely to provide financial protection of the dependents of family man and it remains one of the best means for most husband to ensure adequate provisions for their wives and families after their death.

During this century howsoever, life insurance has become increasingly used, as a method of saving. Successive government have encouraged this form of thrift, by providing income tax relief within certain limits, on life insurance premium. Detailed advice can be obtained from the insurance companies and reputed agents.

INVESTMENT

Family investment is usually defined as a process of placing family funds in more or less permanent form with the expectation of assuring the security of principal and of receiving a regular predictable return from it. This return is termed as the income yield from investment which can be in the form of profit, dividend, interest, rent etc. In other words investment is the use of the money for the purpose of making more money. Investment is different from saving in that it sets out not only to preserve capital but also to make it grow as fast as possible coupled with maximum security of the principal. Although the purpose behind investment for all families is to earn more investment money, surveys on household's investment have shown that the motivation for wanting to improve the family's financial position varies among families. Varying reasons have been given for the investment such as security after retirement, education of children, building up of an estate, improving status and standard of living of family.

Whatever the reasons behind investment, families should fully realise that any investment involves an element of risk. For certain types of investment such as government securities or bonds, the risk is minimal because the government guarantees payment. Investment in private companies may bring in higher rates of return but if the company goes bankrupt the investor may lost his entire principal.

Types of investment

Ownership investment : Here the investor's role is that of an owner or part owner. When the money is converted on land, or in some business, the capital purchased takes the form of material assets. Money gets converted into house or equipment from which income can be got by way of rent (in the case of house), and profit (in the case of business). Since many material assets increase in value over a period of time, this appreciation means a gain in capital. Machines on the other hand lose their value over a period of time and will have to be replaced. In such cases one speaks of depreciation. Thus investment in a property may be more profitable. Even though the return in the form of rent may be same as what one would have got from depositing the money in a bank, because of the fact that the property value appreciates.

Credit investment : A person lending money does not become the owner of whatever the money is being utilized to acquire. The creditor's role in this case is passive unlike in the first case where he becomes owner (one buying a house or flat) or part owner. Creditors and borrowers need not be only persons. Even co-oporations of cities and state and central government raise money to meet their expenses through borrowing. In such a case the government issues bonds. A bond is a contract or a credit instrument between the lender (creditor) and the debtor (borrower). When an investor buys a land of corporation or government he is lending money to the corporation or government. This bond is a record of this transaction. It is termed as bond because the word bond means a promise on the part of the corporation or government to repay the investor the money at a specified future time along with interest. A bond is a fixed returned investment, the amount of interest the investor receives stays the same for the life of the bond.

Investment in house ownership is more popular among families than in bonds, since it gives them a sense of independence, security, prestige, status as well as stable and strong capital asset. Such an asset has a collateral value. A family can raise loans by mortgaging its house at times of need. Investment in jewellery– Families in India invest quite a lot of their savings on jewellery made of pure gold which too have the property of capital appreciation. A jewell purchased for Rs 1,000 ten years ago can be sold today for Rs 4,000.

Mortgage : Mortgage is of two types

(a) Real Estate

(b) Chattel

Both are credit instrument recording loan operations. The Real Estate mortgage is a loan secured by the pledge of real property example- land estate. It therefore records :

1) full listening of the value of the property used as security
2) amount of the loan
3) interest rate
` 4) date on which interest falls on
5) duration and maturity date of the mortgage

Real Estate mortgage consists of two types :

1. Amortized mortgage : This calls for fixed monthly payment which include both interest due and a proportion of the principal. As payment proceeds the amount going to interest declines and that to principal increase. This is a sound method of financing house ownership.

2. Straight mortgage : This is also called a fixed mortgage. In this case a loan is given on a fixed rate of interest. In this payment of full amount should be made on a definite date. If the borrower can not meet his obligation he may be forced to borrow elsewhere and redeem the mortgage or he will renew the mortgage. Renewal implies extra fee payment. All expenses in connection with the mortgage will vary with size of the loan and the length of period.

Chattel mortgage is a loan secured by a pledge of movable property usually spoken of as goods and effects. The mortgage records : -

1) Information regarding the chattel pledge
2) Amount of Loan
3) Interest Rate
4) Maturity Date

Bond

When bonds are purchased from a corporation, a state or public enterprises, it implies that the individual has loaned money to that institution or organization. The individual is the creditor and in return for this loan, the institution pledge to pay a specified amount of interest on special date.

Types of bonds

1. Gilt Edge Bonds : These pay a very high rate of return. The organization issuing these bonds should have a long record of paying interest and principal on time and of earning stable profits. Gilt edge bonds are easily marketable as dividend rates are high.

2. Low Grade Bonds : These are issued by companies having spotty financial records usually new enterprises. Such bonds are not advisable, as they lack stability and marketability.

Bonds may be short issues drawn for a few months or they may be long term issues maturing within 10-25 years. Bonds have state rates of return usually printed on them. Their income is fixed. This creditors can not share further on the profits of the borrowers if the latter secures a good profit in his business. Neither can the bond holder share fully in the misfortunes of the borrower. Bonds generally have first claim on the assets of a company, in case of the failure of the latter.

Stock

When an individual buys stocks in a company he becomes a part owner of the concern. If the business succeeds, it will pay dividends. If profits are high the stock holder is entitled to even higher dividends. If the business fails or does not pay, dividends for a considerable period of time, then the stock holder may even lost his entire investment.

Stocks are of two types

1. Common stock : This does not carry any fixed dividend. There is an element of risk associated with common stock usually when profits are large, common stock holder get high dividend rates. When profits are small, dividend rates are non-existent. If a company goes bankrupt, common stocks may plunge to nothing.

2. Preferred stock : Dividend is fixed in advance and are invariably cumulative, implying that if dividends are not paid when they are due they accumulate and the company must pay up all the unpaid cumulative preferred dividends before it pays anything on common stock. Therefore, the claim of the bond holders on the company's earnings and assets come first, that of the preferred

stock holders next, and common stock holders obtain what is left. Common stock holder has least safety, variable income, and greatest appreciation of value. Preferred stock has considerable safety steady income and generally steady appreciation.

Shares

The capital of a company of limited liability is subscribed to buy individuals in equal units, called shares. Shares holders participate in the rights and obligations of the company. They have a right to the profits of the company, when it is wound up. Shares are transferable property.

Shares are of three types

1. Ordinary Shares : They are of small denomination and obtain divdidends only after all other share holders have been satisfied in regard to dividend.

2. Preferred Shares : They obtain dividends first. Sometimes preference shares can be cumulative, in which case accumulated dividends have to be paid.

3. Deferred Shares or Founders' Shares : Holders of this category are entitled to the profits of the company after every other class of shareholders have received certain stimulated rates of dividends. They carry low nominal value, do not secure much dividend in the early stages of a compay's functioning, but gain through the later stages.

QUESTIONS

A. VERY SHORT ANSWERS:

1. Define savings.
2. Why is it important to save money ?
3. What is joint account ?
4. Define shares.

B. SHORT ANSWERS:

5. How does common stock differ from preferred stock ?
6. Write in short about the post office saving bank.
7. Differentiate between current account and savings account.
8. What is Provident Fund ?

C. LONG ANSWERS:

9. Explain the different methods of savings that could be adopted by an individual ?
10. What are the main objectives of saving ? Explain in brief about the Life Insurance policy.
11. What are the nature of ownership Investment and Credit Investment ?

UNIT-IX

CONSUMER

A consumer is anyone who buys or uses any kind of product. Home makers are consumers in an economic and marketing system. They create a demand for a variety of materials needed at home such as food products, clothing, furniture, household equipment and so on.

Consumer Education

The main purpose of consumer education is to give a better standard of living to all citizens. With constant improvement in working conditions and employment opportunities, income level rise. Hence people have more money and a desire to buy a wide variety of products. There is a growing awareness of the need to teach consumers how to use their money wisely in order to live. In other words, consumer education is a preparation for every day living because it helps people to make intelligent choices. When consumers have proper knowledge and information, they are able to buy wisely, use money intelligently and get greater satisfaction from their efforts.

Consumer rights and responsibilities

The consumer has a right to information; a right to make her choice from the variety available; a right to expect safety in the use of items purchased and a right to air her grievances if any. For every right of a consumer there is a corresponding responsibility. The consumer's responsibilities are listed below :

i. The responsibility of obtaining and using information regarding his/her purchases.

ii. The responsibility of making a wise choice after obtaining all the necessary information.

iii. The responsibility of using a product safely, according to the manufacturer's directions.

iv. The responsibility of voicing legitimate complaints or reporting mal-practices to the appropriate authority.

Rights of Consumer

The Consumer Protection Act 1986, provides the consumer right to:

1. Safety : Which means right to be protected against marketing goods and services which are hazardous to life and property.

2. Be informed : Which means right to be informed about the quality, quantity, potency, purity, standard and price of goods and services to protect the consumer against unfair trade practices.

3. Choose : Which means right to assure, whenever possible of access to a variety of goods and services at competitive prices.

4. Be heard : Which means the consumer's interests will receive due consideration at appropriate tribunals.

5. Seek redressal : Which means right to seek redressal against unfair trade practices or unscrupulous exploitation of consumer.

6. Consumer education : Which means right to acquire the knowledge and skill to be informed to the consumer.

RESPONSIBILITIES OF CONSUMER

Only a responsible consumer can protect his/her rights.

Here are some tips :

1. Purchase only when you need and do not purchase in a hurry.
2. Do not buy blindly. Demand full information before buying.
3. Beware of false/misleading advertisement.
4. Do not compromise on the quality of goods and services. Purchase only quality product.
5. In case of electrical appliances insist on buying goods with ISI mark. In case of food items insist on Agmark and FPO products.
6. Do not forget to obtain proper receipt/cash memo. Always obtain the guarantee/warranty card duly stamped and signed by the shopkeeper, wherever necessary. These can be helpful in consumer courts.
7. Always approach the appropriate authorities or the consumer courts in case of defective goods, deficient services and unfair and restrictive trade practices.

Consumer problems

The consumer is faced with the problem of choosing one or many of the available commodities which will be used in the satisfaction of her personal wants. The desires may be many, but the money available is limited. Therefore, consumer is faced with the task of deciding what should be bought with the restricted purchasing power. Consumer should make choices in such a way that the items selected give maximum utility and satisfaction.

Problems in obtaining consumer information

1. Sometimes the information is just not available. For example- a pamphlet that is needed is out of print.
2. The information must also be provided in a language that is understood by the consumer.
3. Some leaflets and forms are written with difficult words and in a style that the consumer does not understood.
4. Consumers are not always careful in keeping important documents such as guarantees, service instruction and so on. Hence information is not available when needed.

Malpractices of traders

When demand is more than supply, traders get a chance to indulge in malpractices. Though there are various laws and regulations to protect the consumer, dishonest traders still try to use unfair means for extra profit. They have little or no regard for the consumer. When the demand for a commodity is more than the supply, traders get a chance to indulge in malpractices such as adulteration of materials, over pricing or using defective weights and measures. One has to be cautious against false advertisement and inadequate labelling as well.

Malpractices in the manufacture and sale of clothe

Cloth may be adulterated by the mixture of inferior yarn. For example, silk yarn of good quality is becoming increasingly expensive and it is often mixed with yarn made out of waste silk. Sari made out of this mixture of yarns tend to lose their lustre after wash.

It is quite common to mix rayon with cotton and to pass off the resultant material as being a cotton-silk mixture or sometimes as silk itself. This is especially easy with an uneducated customer who thinks the "shine" of the fabric proves it to be silk.

Blending of fabrics is now widely prevalent and the consumer needs to keep himslef/ herself informed of new varieties of textiles during visit to shopping centres. One need not buy at each visit, but try to obtain information from reliable shops. When making purchase it is usually possible to check the composition by looking at the selvedge of the material. Materials made by well known manufacturer and bought at well-established retail shops are generally reliable. Many textile mills have now appointed special stockists for their product.

Malpractices in the household equipment

Points that the consumer should bear in mind in the selection of household equipment is based upon :

1. Advertisement seen by consumer.
2. Consumer's own judgement.
3. The brand name of the product.
4. Market survey done by the consumer before the purchase.
5. Cost of operation and safety factors.

The cost and safety factors are the key to successful purchasing. It is wiser to pay a little more and by ISI marked equipment.

Malpractices in this area arise out of production of sub-standard goods which are often attractively package or passed off as reputed brand. This is especially dangerous in the case of pressure cooker and electrical appliances. Inadequate insulation, poor quality wiring in the latter may even result in fatal accidents.

An ISI mark is a guarantee to the consumer that the Indian standards Institution will take the responsibility for getting the appliances replaced if it has manufacturing defects.

Adulteration

Adulteration can be defined as the intentional addition or substitution or abstraction of substances which adversely affect the nature, and quality of substances. Adulteration may be intentional or incidental. Intentional adulteration is a wilful act on the part of the adulterator to increase the margin of profit. Incidental food contamination is usually due to ignorance, negligence or lack of proper facilities. This type of contamination can take place any time during the period of growth, harvesting, storage, processing, transport and distribution.

Faulty weights and measures

An April 1955 Indian Parliament adopted a resolution to introduce decimal currency and uniform weights and measures based on matric system. A the end of 1956 the standards of weights and measures Bill was passed. The Indian Standards specified not only the requirement and dimensions but also the materials and design of commercially used weights and measures.

Consumer Information

One of the most important aspect of consumer education is true acquisition of information. Information is required for developing responsibility in wise buying. The consumer must also have information regarding the variety of things available and the range of prices at which the same or similar goods are sold. Other bodies are concerned with consumer protection. The Indian Standards Institution (ISI) is such an organaization which produces many informative pamphlets and booklets on standards relating to many products. Consumer goods such as food items, clothing and articles of daily use are covered by Indian standard. The activities of the ISI cover both producers and consumers.

The ISI takes steps to provide wide publicity to Indian standards and to create standards-consciousness among the public.

Consumer information may categorized as given below :

i. Private and independent information.

ii. Public and semi-public information.

iii. Commercial information.

i. Private and independent information

A common source of information is through conversation with friends and neighbours. The advantage of this kind of information is that it can be evaluated in terms of similarity of tests. However, the disadvantage is that the person providing information may not compared different brands of the same item. Thus it may not be full or complete information.

ii. Public and semi public information

This is information produced and made available to the public by Government departments and commercial information is also generally available through newspaper, Radio and T.V. bulletins. Information is contained in special newspapers like the "Economics Times" and the Financial Express.

Commercial Information

Some commercial information is available from shops or sales organizations in the form of prices, product specifications and guarantees. The publicity department or commercial organization undertakes the task of communicating information to the consumer, information may come from the various sources for not misleading by the traders.

Lack of Standardized product

Standardization is a method by which quality control can be maintained. This is done to maintain the minimum standards necessary for food stuffs. Standardization is carried out by government and certain voluntary organizations. Quality standards are descriptions of commodities in terms of net weight accurate size, dimensions, content and other characteristics. Standardization is done on the basis of three types of preliminary studies (i) Chemical (ii) Biological and (iii) Field surveys.

Advertisement

Advertisement are also a form of commercial information. They are meant to provide publicity that a product is available and give information about it. Advertising has a most powerful influence on purchasing. It has a great capacity to draw the attention of the consumer to goods and services. The advertiser is primarily trying to boost sales of his product. The most popular advertising media are newspaper, radio, television, cinema, posters or leaflets, demonstrations or special programmes. All available audio-visual techniques and knowledge of human psychology are used in effective advertising. Successful advertising depends on powerful and catchy words or slogans, colourful eye-catching designs and all kinds of other offers to the consumer. The consumer should not be carried away by advertisement alone. We should use our judgement based on past experiences in selecting goods. The most useful function of advertising is to draw the attention of the consumer to new products. Manufacturers have a duty to the public not to indulge in misrepresentation in order to boost sales of their product.

Aids to help consumers

Governments all over are seriously concerned with protecting the consumer against various risk in buying and using commodities. The consumer is generally helped by certain market aids available. These are standardization marks, labels, packages, advertisement pamphlets and leaflets.

Standardization marks

A product that is manufactured should conform to certain specific conditions of quality, weight, value, proportion and so on. The national standards in our country are adapted with suitable modifications from international codes. In India, the prevalent standards are specified by the P.F.A. (Prevention of Food Adulteration), Agmark, I.S.I. (Indian Standard Institution), F.P.O. (Fruit Products Order).

Labels.

Labels give information about the quality and use of the commodity. Labels are expected to carry information about brand names, the composition of the product, the standards it conforms to the date of manufacture till the date of expiry (especially for drugs) and warnings regarding the dangers arising out of misuse of the product. Indian Standards Institute has laid down proper standard of labelling.

Packages

If it appears in package form without a label carrying the name and place of business of the manufacturer, and an accurate statement of quality of the contents in terms of weight, measure an item is considered misbranded. The label of all prepackaged items shall bear the following information as applicable to the item being labelled.

i. Name of the item
ii. List of ingredients
iii. Net contents
iv. Name and address of manufacturer
v. Country of origin
vi. Language
vii. Batch number
viii. Instruction for storage
ix. Date of manufacture and expiry
x. Maximum cost excluding local taxes

Advertising is a most important aid for the consumer. It not provides information but also has the maximum impact on consumer, visual or audio-visual (cinema, T.V., Radio)

Pamphlet and leaflets

A pamphlet or bulletin, may contain many pages and treat a number of topics or steps in a given problem. The best pamphlet is brief and simple.

The leaflet, is a single sheet of paper folded to make a four page piece of printed matter. However, a leaflet can be printed on one side or printed on two sides of a folded sheet, or folded three of four times with printing on all sides. The leaflet usually treats one job or one small problem. The best leaflet gives accurate and specific instructions on how to do a job.

R.T.I. Act

The right to Information Act (R.T.I) is to provide access to information under the control of public authorities in order to promote transparency and accountability in the working of every public authority.

(1) This act is called the Right to Information Act 2005.

(2) It extends to the whole of India except the state of Jammu and Kashmir.

This Act of parliament received the assent of president on the 15th June 2005 and is published for general information.

(a) "Information" means any material in any form, including records, documents, memos, e-mail, opinion, advices, press releases, circulars, orders, logbooks, contracts, report papers, samples, models, data material held in any electronic form and information relating to any private body which can be accessed by a public authority under any other law for the time being enforced.

(b) "Public Authority" means any authority or body or institution of self government established-

i. by or under the constitution;

ii. by an other law made by parliament;

iii. by any other law made by State Legislative;

iv. by notification issued or order made by the appropriate government.

QUESTIONS

A. VERY SHORT ANSWERS:

1. Define a consumer.
2. What do you understand by the term Adulteration ?
3. What is an I.S.I. mark ?
4. Define R.I.T. Act.
5. Define Standardisation Marks.

B. SHORT ANSWERS:

6. How does pamphlet differ from leaflet.
7. Define labels and pakages.
8. Define Advertisement. What are the popular advertising media ?

C. LONG ANSWERS:

9. Explain the right and responsibilities of a consumer.
10. Write briefly the problems faced by the consumers.
11. Explain the aids which help the consumers while buying goods.

UNIT-X

CARE OF CLOTHES

Cleaning and finishing

It is always necessary for human being to wear clean clothes. Soiled clothes gives unpleasantness. They may also harbour germs in the skin. Soiled clothes do not absorb moisture from the skin when the air spaces are chocked with dust and dirt. Therefore, clothes should always be cleaned.

One should never let clothes get too dirty or let them remain unwashed for too long. As perspiration has a nasty odour and a deteriorating effect on clothing. Clothes should be carefully washed and put away.

This is very important that the different kinds of fabrics have to be washed in different ways. Laundry work is one of the most important as well as heavy task that falls on a housewife especially if there is a big family. If suitable laundry equipment and materials are used, the work becomes lighter and easier. Now we will learn about the laundry equipment, cleansing materials, stiffening agents, blues and stain removal.

LAUNDRY EQUIPMENT

Tubs and Buckets

These are the most essential articles for laundry work as they are used for various purposes like, steeping, washing, rinsing, blueing, starching, dyeing and storing water.

The most suitable material for tubs and buckets is galvanized iron, as it does not readily rust and is easy to clean. These days plastic tubs and buckets are also available in the market and are equally good for laundering purposes.

Sink

It is very advisable to have a sink, as it reduces the amount of work and labour involved in washing clothes. It should be so constructed in size and at a place and height from the floor to facilitate its use for washing clothes without causing much strain on the worker. Draining boards should be attached on to either side of the sink.

Boiler

Most of the household clothes such as table and bed linen need boiling in order to disinfect them and to preserve their whiteness. Hence some arrangement for boiling is necessary. The best material for a boiler is galvanished iron because this does not rust easily. Even a bucket of convenient size can serve the purpose.

A pair of tongs fairly long or a wooden boiler stick is necessary for putting the clothes in the boiler and for removing them. Electric boilers are also available in the market.

Enamel Bowls and Basins

Enamel bowls and basins are utilised for several purposes in laundry. Medium size basins are used for washing small articles of silk and wool. These are also used for preparing starch, blue and dyes. Small bowls are used for stain removal.

Spoons and Containers

Wooden spoons are usually used for preparing starch and stirring blues and dyes. Metal spoons are used to handle laundry materials. Containers such as bottles and jars are needed for storing laundry materials. Metal containers are not advisable because these are liable to react with most of the reagents and so cause trouble.

Scrubbing Brushes

For washing very soiled articles such as jharans etc. hard bristle brushes are used.

Scrubbing Board

The use of a scrubbing board is an improvement over the beating method commonly used in homes and by dhobies, because beating weakens and shortens the life of the fabrics. The scrubbing boards are usually made of wood. (See Fig I A)

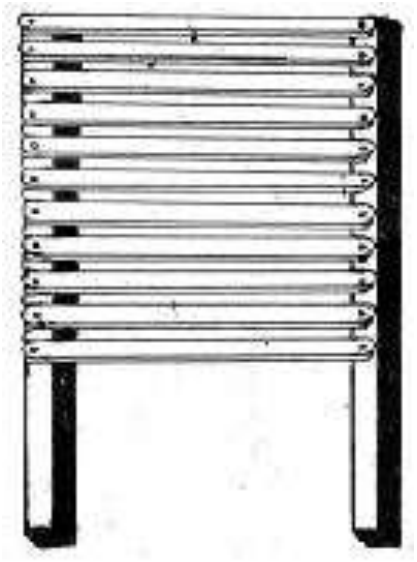


Fig. 1 (A) : **A Scrubbing board**

Use of Scrubbing Board

The use of a scrubbing board is very simple. A wash tub, half filled with water, is kept on a table $2^{1}/_{2}$ ft. high (See Fig I B). The lower end of the board is placed in the tub. The article to be cleaned is made wet, spread on the board and soap is applied. The article is rubbed up and down on the board. Occasionally, it is dipped in the water to wash out the loosened dirt. The scrubbing board gives efficient work without harming the fabrics. Any cotton fabrics used for every day wear can be washed by this method.

Fig. 1 (B) : **Use of a scrubbing board**

Suction Washer

This consists of two parts. The top part is the wooden handle and the bottom part is the washer. The washer is made of copper and is hollow inside with holes all over its lower portion. The choice of copper has no definite reason except that it is a good and durable material and does not rust easily. Zinc could also be used.

Fig. 2 : **A suction washer**

A suction washer is used for all types of fabrics, specially for those which need careful handling. All heavy woollens such as blankets, saris, suits and even delicate fabrics such as laces, silks and organdies can be washed by suction washing.

Articles to be washed are immersed in soap solution in a tub or a basin; and the suction washer is worked up and down on clothes in the soap solution for 15-20 minutes until the dirt is removed. (See Fig 2).

Drying Line

In India, out-door drying is possible almost all the year round. A fixed wooden rod is preferable to the ordinary clothes line. A jute, cotton or plastic rope or galvanished wire is used for this purpose. These should always be kept clean so that they do not leave any stain on the garments. The best place to dry the clothes is outdoors in clean air and plenty of sunshine.

In places where the rains are heavy for three or four months or where enough outdoor space is not available, some arrangement of indoor drying will be essential.

Drying Racks

Drying racks are used when outdoor drying is not possible. Such racks are made of wood and are easy to carry inside or outside the house.

Dry Cleaning Pump

Cleaning with water and soap is not always possible or advisable for all kinds of fabrics. Some rich and expensive silks, rayons and woollens loose their lustre, sheen and rich texture when washed with water. Such fabrics are cleansed by a method called dry-cleaning.

Dry cleaning is really not dry, but it is cleaning with grease solvents other than the soap solution. Dry cleaning may be done by grease absorbents also. Therefore in dry cleaning, soap and water are replaced by what are called "Dry Cleaning Reagents".

In western countries dry cleaning machines which are fairly small in size which can be used in the house are available, but such machines are not available in the Indian market, and a housewife has to send her clothes to the dry cleaners. When dry cleaning is attempted at home, open tubs or basins are used. But many of the dry cleaning reagents catch fire easily and also evaporate quickly, and so such an attempt is not free from risk. Dry cleaning at home is more of a waste than economy. The grease solvents such as petrol and benzene which are used for dry cleaning, are volatile and most of these are lost in evaporation when used for dry cleaning in an open basin or a tub. The "Dry Cleaning Pump" will save petrol as well as give efficient work. The "Dry Cleaning Pump" is a round tin with a lid, a tap a the lower side and fitted in suction washer with a handle. The lid is tightened up by means of three screws which makes the tin almost airtight. (See Fig 3).

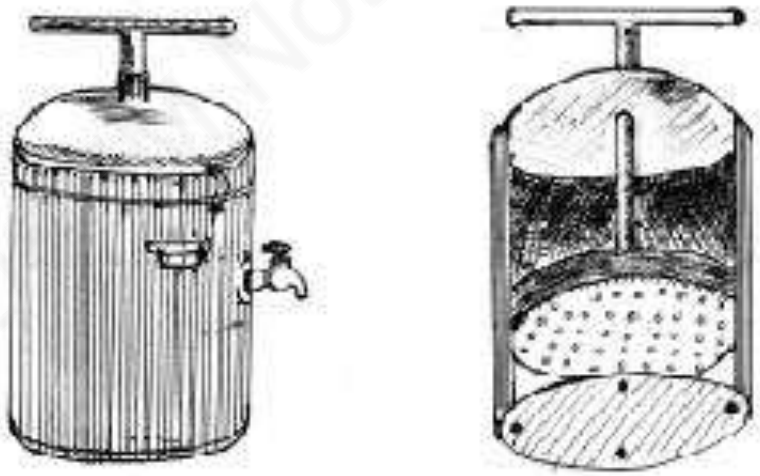


Fig. 3 : **Dry cleaning pump**

When using, the tin should be half filled with petrol, the dirty articles placed in and the lid screwed down. The suction washer is worked up and down by means of a handle for 15 to 20 minutes. Time depends on the amount of dirt in the garment. At the end of the process, the tap is opened and the petrol is received in a bottle through a filter paper. Then the lid is unscrewed, and the articles are removed from the tin and left to air.

The whole apparatus should be made of some rustless metal. A wooden handle to the suction washer is more convenient.

Finishing Apparatus

For ironing, the necessary articles are iron, ironing board, ironing table, sleeve board and coverings for these.

Iron

There are various types of iron available in the market to meet the requirement. Charcoal or electric iron is used for giving finishing touches to the washed garments. Electric irons are more convenient to use because of its quicker and cleaner heating property, smooth and bright surface.

Ironing board

It will very much facilitate ironing, if ironing board (Fig 4-a) as well as sleeve board (Fig 4-b) are available. They are all padded with flannel and when in use are covered with a white linen cover stretched out smoothly. All these boards vary in shape and size and are made of wood. They are collapsible, easy to be moved and when not in use do not need much storing space. These are also known as skirt-boards.

Fig. 4 (a) : **Ironing Board**

Fig. 4 (b) : **Sleeve Board**

WASHING AND CLEANING AGENTS IN LAUNDRY

Water

When certain chemical salts, such as those of lime and magnesium, occur in water, that water is said to be 'hard'. This hardness is shown when it is difficult to make a 'lather' (a soft foaminess) with soap. When soap is added to hard water the salts of calcium and magnesium react with the soap to form insoluble lime soap, which forms a paste or deposit on the surface. This reaction "kills" the soap and renders it useless for washing; the sticky paste traps dirt and deposits it back on the fabric in the form of black scum.

The water free from the above mentioned impurities is called 'soft water'. Soft water is very suitable for washing clothes. Rain water is soft.

Water dissolves some kind of dirt and when in motion carries away particles of dust. It can be used cold, for soaking clothes and loosening dirt; when hot, for washing clothes and dissolving grease; when boiled, for purifying and disinfecting clothes. It can also be used in the form of steam, it has the same effect as boiling water. Steaming involves less labour and is more economical.

Cleaning Agents

A large number of cleaning materials are available in the market these days. Some of them are described here with instructions for their use.

Soap

There are various types of soap available in the market. The main ingredients of soap are fats and alkalies. Its purpose in laundry is to make a lather. It helps to break down the surface tension of the fabric and hence soap solution wets the fabric more readily than plain water. When soap comes in contact with water, alkali is liberated by the action of water on soap and helps the emulsification of greasy dirt, thus facilitating the washing process.

Choice

Choose a good soap. Soap can be judged in the following ways :

1. The soap should be of a clear pale colour. A dark colour soap may contain impurities.
2. The soap should feel firm when pressed with the fingers. If it feels soft, it contains too much water and will be wasteful in use. Hard soap usually does not dissolve easily and hence does not give good lather. This means more labour and more time to launder a dirty cloth.

3. Note the appearance of the bar or soap cake. Any soap that develops a white powder on the surface should not be used. This shows the presence of too much of alkali, which may be harmful to the fabric.

Soap Solution

Soap solution is generally made by mixing about 4 (four) oz of shredded soap in 1 (one) pint of water.

Place the shredded soap in a pan, pour water over it and heat the soap solution slowly to avoid over boiling, till the flakes have dissolved. Remove the pan from the fire and bottle the solution when cooled. The solution is used for making a permanent lather in washing water, for all types of cleansing other than friction washing.

Soap Jelly

Soap jelly is made by mixing 1 (one) part of soap (bar or sunlight) and 5 (five) parts of water.

Shred the soap, add water and dissolve the soap slowly over fire. Stir well. Continue heating on slow fire till a jelly like consistency is obtained. Cool and store in a jar. Use in the same way as soap solution.

Washing Powders

Many washing powders are advertised for laundry work, but their suitability depends on their composition. They usually consist of some soap and alkali, such as sodium carbonate or washing soda or sodium perborate. Washing powders help in cleansing grease readily because of the alkali, but the drawback is that excessive alkali may damage the fabric. Therefore housewife should purchase soap powder of a well known brand.

Sulphonated Fatty Alcohols (S.F.A. Powders)

These are known as S.F.A. powders. They are similar in appearance as soap powders, and are available in the market as soap substitutes. They give a fine lather in cold or tepid water, and even in hard water without the formation of a scum. These are non-alkaline and therefore, are particularly suitable for woollen and coloured fabrics, which are sensitive to alkali or heat. But for their cost, they would have been an improvement on soap.

Petro-Chemicals

There are a number of synthetic substances that are now used as cleansing agents, chief amongst them is 'tinopal'. This is used on white clothes. It is a cream coloured powder.

The cloth is first washed in the usual way and then kept in a solution of tinopal in water for half an hour. The colour of the cloth becomes beautifully white. Only one tablespoonful of the substance is to be added to a bucketful of water and this solution is sufficient for about a dozen of clothes. It is very good for any white cloth e.g. – nylon, cotton, linen etc.

Soap Flakes

Soap flakes are made from good quality soap. This is produced as an extremely fine film and then broken up into flakes which can dissolve in warm water. The flakes form a very good lather in which there is no necessity of rubbing soap on the fabric.

Rita Nut (Reetha-nut)

Rita-nut is a fruit of a big tree which grows abundantly in Central, Southern India and Ceylon. These fleshy berries can be dried and stored. Ritanut is slightly acidic unlike soap which is alkaline. The lather produced by the solution is better than that of the soap, for it is less affected by the hardness of water. Ritanut solution is ideal for delicate fabrics like coloured silk and fine cottons where the colours may bleed. This is because these fibres can stand a trace of acid better than alkali. But it is not good for washing white woollens or white silks.

The cleansing agent in Rita is saponin, a compound of milk, sugar and a sapogenin, The solution is excellent for washing gold and silver too. It is also used as a shampoo for the hair.

Crack the nuts, remove the stones, break up the shells and use the kernel. To make a good solution take 250 gms of ritanut kernal soaked in two pints of boiling water for 8-12 hours, stir well and strain through a cloth. Use the solution when it is cold, instead of soap solution. This solution can be stored for about a month without getting rancid. Mix sufficient solution with cold or hot water to get a good lather, stir briskly till a good lather is formed. Wash the article in this lather by kneading and squeezing method. Rinse first in plain warm water to eliminate the rita nut solution. Then rinse again in fresh cold water to freshen the colour.

Shikakai

It is a soap pod from a prickly bush found in South India. Its qualities and values are similar to the rita. It is excellent for removing grease and washing coloured cottons and silks. The lustre of silk is retained and the fabric gets back its freshness.

A mixture of powdered rita nut and Shikakai, soaked in warm water, makes an excellent hair shampoo.

The pod (dark chocolate brown in colour) is dried in the sun and make into a fine powder.

A tablespoon of powder is added to a pint of water, and boiled to a thick paste.

Shikakai is often combined with ritanut powder to wash one's hair and also to clean silverware and gold.

Bran Solution

Bran is the outer skin of wheat grain. It contains a certain amount of starch gluten, and vegetable and mineral salts. The extraction in water is non-alkaline and has cleaning action. It preserves the colour as it contains mineral salts. So bran solution is used for cleaning articles of uncertain dyes. To increase the cleasing action some shredded soap is added to the solution while preparing it.

Put 1 (one) part of bran in 4 (four) parts of water. Place the mixture on fire till it boils. Let it simmer for half an hour. Strain through a muslin and bottle the solution. Dry the used bran and keep it to be used once again.

Paraffin wax

9 litres of hot water

28.4 gms of washing soda

(56.8 gms) of shredded soap

2 tablespoons of paraffin.

Place washing soda, soap and water in a basin or a pail, and heat till the soap dissolves and the water reaches the boiling point. Remove from the fire, cool slightly, add paraffin and stir. Wet the clothes and place them in the wash; press to ensure proper soaking of the clothes in the solution. Return to the fire and boil them for half an hour. Stir occasionally with wooden rod. Rinse thoroughly in hot water several times. Dry in open air to get rid of the paraffin smell. This solution is of specific use for dirty articles soiled with grease.

Javelle water

Javelle water removes stains from white cotton and linen goods. To prepare it, dissolve 500 gm. washing soda in a litre of boiling water. Mix 250 gm. of chloride of lime in 2 (two) litres of cold water. Leave the lime to settle. Pour the clear water into the dissolved soda and water. Bottle the preparation. Use it for white cotton and linen clothes only, and always wash out quickly with clean water.

LAUNDRY ACCESSORIES

Stiffening agents

Stiffening agent is one of the important accessories of laundary. A certain amount of stiffness in the washed clothes specially cotton and silk fabrics is required to obtain a smooth glossy surface which is resistance to dirt and dust. Only such starch solution should be used which can penetrate the fabric and not coat its surface. Moreover, the stiffness should not make the garment too hard to be pliable. The home-maker should be careful in using appropriate varieties of stiffening agents.

Starch is generally used as a stiffening agent for cotton and linen fabrics while gum and gelatins for silks. Starch is a carbohydrate and the physical appearance of the starch obtained from different sources is very much the same. Different sources of starch are rice, wheat, maize grains, palm stems, potatoes, sweet potatoes and arrowroot, tapioca etc.

Rice Starch

Recipe - 1 tablespoon of rice
1 cup of water
$^1/_2$ teaspoon of borax
$^1/_4$ teaspoon of wax

Method

Boil rice in the water till it is thoroughly cooked. Then, rub through a muslin to get a smooth paste. Dissolve borax and wax in boiling water and add them to the strained rice mixture. The starch is now ready. Dilute the prepared starch with cold water and use as hot-water starch.

Sometimes another, method of rice starch is also prepared for all ordinary household purposes. It is made as follows. Put 5 (five) tablespoons of rice into 2 (two) litres of water. Boil slowly, adding water when necessary, until the rice water thickens (desired consistency). Add 2 (two) litres of boiling water and strain. Tapioca may be substituted for rice.

Preparation of boiling water starch

Recipe- 1 tablespoon of starch
2 tablespoon of cold water
2 cups boiling water
$^1/_2$ teaspoon borax
$^1/_4$ teaspoon wax.

Mix the starch to a smooth paste with cold water in a basin. Add borax and wax. Pour over the boiling water quickly, stirring all the time till a colour change takes place, which shows that the starch grains have burst and a colloidal solution has been formed. This is the full strength starch. It should be diluted immediately by adding to it an equal volume of cold water. If it is allowed to remain without dilution, it will form a solid lump as it cools.

The starch must be dried well in the fabrics. Then the fabrics are damped evenly before ironing to get good results.

Cold water starch

Recipe- 1 tablespoon of starch
1 tablespoon of boiling water
$^1/_2$ teaspoon of borax
$^1/_4$ teaspoon of wax

Place the starch in a basin. Dissolve the borax and wax in boiling water and add to the starch in the basin. Then add cold water and stir the mixture. Strain through a muslin. Cover and leave it for half an hour before use. This allows the starch grains to soften. Stir thoroughly before use.

The article to be cold-water starched must be dried completely. After dipping the article into the starch it must be squeezed well. Then iron the cloth immediately. Quick movement of the hot iron is essential. This starch gives a very stiff effect and hence is used for muslin articles, collars, cuffs, shirt fronts, frills etc.

The strength of the starch used depends upon two factors -

1. The thickness of the fabric
2. The stiffness required in the article.

Thin texture fabrics need heavy starching, whereas the thick fabrics need light starching. Full strength starch is, therefore, diluted with cold water to the required strength.

Gum Arabic

It is used in place of starch for silk and rayon fabrics. It should be diluted with water in the ratio- 1 (one) tablespoonful of gum arabic to $^1/_2$ (half) litre of water.

Blue

Blue is used in the last rinse for bleached cotton and linen. It is used to give a good colour to a washed cloth. Bleached fabrics after wear and washing, lose whiteness and get a yellowish tint. To counteract this yellowness, its complementary colour, blue is used and the whiteness is restored.

Originally blue was obtained from the indigo plant. Now a days it is now manufactured artificially. It is generally sold in the form of a block. The blue is tied in a piece of muslin and squeezed in cold water until the required depth of colour is obtained.

It is obtained from chemical, vegetable and mineral sources in the form of powder, liquid, balls and cubes. The colour varies according to the sources from violet to blue or from greenish blue to bluish green. They also differ in their solubility. The chemical blues such as the coalar dyes are completely soluble.

STAIN REMOVAL

Stain is a spot or mark of discolouration left on fabrics by the contact and absorption of some foreign substance. Some stains are easily removed by ordinary methods or reagents, while there are others which need special treatment. This entirely depends on the nature of the stain.

Stains are classified according to the substance that causes them. Broadly speaking they can be divided into : (a) Animal, (b) Vegetable, (c) Grease, (d) Dye and (e) Mineral.

Animal stains are those caused by blood, egg, milk and meat juice. As these contain protein matter, heat must be avoided in removing them, otherwise the protein matter will get fixed in the stain.

Vegetable stains include those caused by tea, cocoa, coffee, fruit and wine. These are acidic, therefore require alkaline reagents to remove them.

Grease stains may be just grease spots or some colouring matter fixed with grease. These include butter, curry, oil paint, varnish and tar stains. In removing these stains, some grease solvents and an absorbent are first used to dissolve or absorb grease before the removal of the colouring matter. A solvent soap is also very effective for removing these stains from washable fabrics.

Dye stains may be acidic or alkaline, and so, the nature of the stain is ascertained before a specific removing reagent is used.

Mineral stains, such as iron, mould, black ink and certain medicine stains are compounds of a metal and a dye. These are first treated by acid reagents to act on the metal, and then by an alkaline solution to neutralise the acid reagent and act on the dye.

Neither perspiration nor scorch marks fall into any of the above groups. Perspiration has no protein component and cannot, therefore, fall under the Animal group. It cannot obviously fall under the vegetable group, even though it is acidic.

Scorch is a brown stain caused by a very hot iron and is in a class by itself.

Grass stains come under vegetable groups but a different method is used for removing the green colouring of chlorophyll.

Stain removing must be carried out with care and in such a manner as to restore the garment to its original appearance and texture.

General Rules

1. Remove the stains when fresh, as then they are easy to remove with simple methods.

2. Study the nature and the texture of the fabric specially, when chemical reagents and bleaches are to be used, as these have injurious effects on wool, silk and synthetic fabrics. When chemical reagents are used specially on animal fabrics, they must be in dilute solutions. Several applications of weak solutions are less harmful than a single application of a strong solution or an undiluted reagent. If bleaching has to be done, only hydrogen peroxide in dilute solution (1 teaspoon to 1 pint) is used for silk and wool, and for rayons nothing but sodium perborate. The fabrics must be rinsed in cold water for several times after the above treatment.

3. Treat known stains with specific reagents.

4. Unknown stains should be treated with simple methods first i.e. steeping in cold or hot water or washing with soap; then with mild reagents, followed by strong reagents. Bleaching is required only when all other methods fail to remove the stain.

5. All the acid reagents should be neutralised with an alkaline rinse and vice versa, before rinsing out with water.

6. If a stain is removed by the sponging method, sponge the stain with the solution, working in a circular movement starting from the outer edge of the stain to its centre. This prevents the stain from spreading.

7. The fabric should be allowed to stay in the reagent only until the stain is removed and the fabric should be taken out at once. If the reagent is allowed to dry into the fabric it may damage.

STAIN REMOVAL

Sl. No.	Stain	Condition	White cotton and linen	Coloured cotton and linen	Silk and wool	synthetic fabrics
1.	Tea, coffee fruit & wine	Fresh	Pour boiling water through	1. Steep in warm water 2. Steep in dilute borax($^1/_2$ teaspoon to 2 cups of water)	Same as coloured cotton	Steep in warm sodium perborate solution (1 teaspoon to 1 pint)
		Dry	1. Spread borax over and pour boiling water through 2. Steep in glycerine until stain is removed	1. Repeat the above method 2. Steep in warm water. Apply glycerine and rub. Repeat till stain is removed	1. Steep in borax 2. Treat with dilute hydrogen peroxide	Same as above
2.	Blood, egg (Protein)	Fresh	Soak in cold water, then wash in dilute ammonia	Same as the white cotton	Sponge with cold water	Wash in cold water
		Dry	Steep in cold water and salt until stain is removed (1 OZ to 2 pints)	Same as white cotton	Same as white cotton. For unwashable fabrics apply starch paste. Leave it to dry. Repeat treatment, if not removed.	Wash in cold water
3.	Curry (grease and haldi) (Note-Treat immediately)		1. Wash with soap and water 2. Bleach in sunlight and air 3. Bleach with Javelle water	1. Treat with solvent soap 2. Fast colours to bleach in sunlight 3. Treat with 10% potassium permanganate solution followed by 8% sodium bisulphite solution	1. Treat with solvent soap 2. Treat with potassium and air and ammonia Dip the stained portion alternately in the above solutions.	1. Wash with soap and water 2. Bleach with sodium perborate permanganate

Sl. No.	Stain	Condition	White cotton and linen	Coloured cotton and linen	Silk and wool	synthetic fabrics
4.	Ink (black) and blue)	Fresh	1. Rub the stain with a cut tomato, wash; rub salt, wash. Repeat the process till the stain is removed. 2. Soak the stain immediately in sour milk or curd for ½ an hour. Do not allow the curd or milk to dry. Wash with soap and water.	Same as for cotton	Treat with sour milk or curd as for white cotton	Same as for silk and wool
		Dry	Try above numbers 1 and 2 with prolonged treatment. Steep in dilute oxalic acid. Rinse thoroughly with dilute borax solution	Same as above	Steep in dilute oxalic acid and rinse in dil. ammonia solution	Same as above
5.	Marking Ink (This stain is very difficult to remove)		Steep alternately in dilute iodine solution and dilute sodium thiosulphate solution or potassium cyanide	Same as cotton	Same as cotton	Same as cotton
6.	Ball Point Ink		Swab with methylated spirit using a pad of blotting paper below	Same as for white cotton	Same as for white cotton	Same as for white cotton

Sl. No.	Stain	Condition	White cotton and linen	Coloured cotton and linen	Silk and wool	synthetic fabrics
7.	Iron rust		1. Steep in oxalic acid solution and then rinse with dilute borax solution 2. Steep in solution of salts of lemon	Same as for white cotton	Same as for white cotton	Same as for white cotton
8.	Lipstick		1. Steep in methylated spirit and wash with solvent soap 2. Moisten and soften by working glycerine into the stain. leave for a short while Rinse and then wash with surf or soap	Same as for white cotton	Same as for white cotton	Same as for white cotton
9.	Mildew		1. Apply soap lather on the stain and cover it with French chalk and place in the sun to bleach. Repeat the process till the stain is almost removed. Then treat it with salt and lime juice wash. 2. Bleach with javelle water	Same as for white cotton if fast colour Bleach with hydrogen Peroxide	Same as for white cotton Same as for white cotton	Same as for white cotton Bleach with sodium perborate
10.	Mud		Allow to dry and brush it off. Wash with soap and water. If persistent, treat with solution of potassium permaganate and oxalic acid.	Same as for white cotton	Same as for white cotton	Same as for white cotton

Perspiration and scorch stains

These stains form a class by themselves. Bleaching in sunlight is usually effective in removing them. Mild bleaching reagents like ammonia can also be used.

Grass Stain

Though grass stain is a form of vegetable stain, it requires special treatment for its removal. Kerosene, turpentine and solvent soaps are generally used.

WASHING AND FINISHING OF COTTON, SILK, WOOL AND SYNTHETIC FABRICS

Laundering of clothes consists of two processes- the process of removing dirt from the clothes and the process of finishing them to regain the appearance of neatness as a new fabric.

WASHING AND FINISHING OF COTTON FABRICS

The processes involved in the laundering of cotton clothes are –

1. Examination of articles

Examine the article for tears, holes and stains. Mend the tears and holes, sew on buttons and remove stains before wetting the clothes.

2. Sorting out garments

Sort out clothes into the following groups – white, light coloured, fast, non-fast coloured and fabrics requiring special care. Each group should be washed separately.

3. Steeping of garments

Soften water with ammonia or borax solution. Use correct water temperature for each variety of fabric, i.e, hot water for white cottons and warm water for fast coloured cottons. Dissolve mild soap in water thoroughly before adding clothes. Use clean tub that has no rust marks. The tub or bucket should be sufficiently large to hold sufficient quantity of water and the clothes. Dip the clothes in water. Very soiled clothes may be soaked 15-30 minutes before washing to loosen the dirt.

4. Boiling

Boiling is an additional process for white cotton and linen clothes if necessary. This helps in improving their colour, disinfects them and removes obstinate stains.

5. Washing of garments

Wash the garments in warm or cold soft water. The method used in washing is determined by the texture of the fabric, the type of material, its colour and type of dirt present in it.

6. Rinsing

Rinse the clothes at least twice in clean water to remove all soap and other chemicals. If soap is allowed to remain in clothes it will make them yellow and weak. Hence rinsing should be continued till the water is clean. The first rinse may be at the same temperature as that of the wash water and the second may be in cooler water.

7. Wringing

After each rinse wring out the moisture of cotton clothes immediately.

8. Stiffening or starching and blueing

Starching and blueing may be done in a single process. Add a very small amount of blue to the last rinse for white cottons if they appear yellowish. Use starch to restore original finish. Heavy fabrics require less starch than light weight ones.

9. Drying

Hang white clothes in the sun and coloured clothes in the shade. Coloured garments should be turned inside out to retain colour.

10. Dampening and ironing

Cotton clothes should be well dampened for ironing. Sprinkle warm water, roll and keep them covered for sometime before ironing. Use a hot iron according to the suitability of the fabric.

As regards ironing, cotton may be ironed on the right or wrong side. Iron all double portions of garments such as hems, seams etc. on the wrong and right side to dry them thoroughly. Iron small parts first, i.e, frills, waist bands, lace edgings. Place the garment flat on the table. Guide the work with the left hand to prevent creasing. Special attention should be paid to tucks, pleats, collars etc. Creases that are made accidentally should be lightly dampened then pressed out with a hot iron.

Press a cloth on the wrong side and finish on the right side. Avoid frequent starching or creasing in the same place. Press only on the lengthwise, crease down the centre of the table clothes with the iron, the other folds should be made double the sheets and press them to save time. Fold and press folds as one's like.

WASHING AND FINISHING OF SILK FABRICS

Silk is an animal fibre of delicate and fine texture. It needs special care in laundering.

1. Preparation and stain removing

Before washing repair tears if any, check up stains. Strong acids, alkalies and strong bleaching agents are harmful to silk. Acid stain removing reagents are less harmful. For old stains use weak solutions of borax or sodium and perborate and for coloured silk hydrogen peroxide with a few drops of ammonia for white silk.

2. Steeping

Steeping is not necessary because silk is cleaned easily. Very soiled white silks which are discoloured by wear may be steeped in warm water for a short time. A small proportion of borax, added to the water makes it more effective.

3. Cleansing and washing

Prepare warm soapy water, using soap solution or soap flakes to make lather. Coloured silks are best washed in rita-nut solution. Rita-nut solution not only cleanses the silk fabric but also prevents colour from bleeding. Knead and squeeze gently in the lather and add extra soap solution, borax or ammonia to the soiled parts. Avoid rough handling such as rubbing, wringling or twisting of the fabric.

4. Rinsing

Use warm water for the first rinse and cold water for the final because this helps to stiffen the fibres. A little lime juice may be added to the final rinse. This helps to clean the colour and renew the sheen.

5. Stiffening

There is a natural gum in the silk fibre, which is stiffened by the final cold rinse giving a light stiffness to the article. If extra stiffness is necessary, add gum water to the last rinse. Formula for stiffening is two teaspoonfuls of gum to a quart (2 pints) of water. Squeeze lightly by hand to remove the moisture.

6. Drying

Dry silks in a shady place and not in the sun. After removing the moisture these are rolled in a dry cloth for half an hour before ironing. Do not completely dry the silk but keep slightly damp for ironing and finishing. But Tusser silk should be dried completely before finishing. This type of silk has more natural gum which melts with the heat of the iron. It makes the ironing easier by smoothening the material.

7. Dampening, ironing and finishing

Finish silks when evenly damp. Do not sprinkle water as it leaves water marks. Wrap the clothes in damp towels and unroll for ironing. Since silk is an animal fibre it can be easily spoiled by the application of excessive heat. Therefore, precautions must be taken in finishing. A hot iron will scorch the silk while a cold one will drag and crease the surface of the silk instead of giving it a smooth finish. Test the heat of the iron on a piece of paper. If no mark is left on the paper until we have counted three, the temperature is correct for the silk.

Iron white silks on the right side, if a gloss is desired. All darked colours should be ironed on the wrong side to avoid a glaze. Tussor and eri silk should be ironed on the right and wrong sides according to their colour and surface finish. Cultivated silks must be ironed when evenly damp to get a uniform and smooth finish. However, all silks should be ironed till they are dry, or else creases will reappear on the dampened portions.

WASHING AND FINISHING OF WOOLLEN FABRICS

Wool needs special care in laundering because of its tendency to shrink or stretch. Woollen fibres have rough scales which are softened by moisture, heat and alkalies. These softened scales interlock when friction is applied and this results in shrinking. As the washing proceeds there will be more entanglement of the fibres and the fabric will become smaller, thicker and harder resulting in felting.

The texture of the fibre is affected by the use of alkalies. Hence in washing woollen garments, friction should not be used and excessive heat and alkalies should be avoided. If the water is hard, it could be softened by using a few drops of ammonia.

Preparation

The surface dust should be shaken out. The outline of the garment should then be marked on a newspaper before commencing the washing.

Steeping

Wool loses its strength when wet. Hence woollen garments should not be steeped. Very dirty ones may be steeped for a few minutes in warm, soft water.

Washing

In laundering woollen articles, both the washing and rinsing water should be prepared before the garments are wetted. The washing water should be lukewarm (95-100 degrees F), and the articles should be washed by kneading and squeezing only. Soiled parts can be attended to by patting extra soap solution over them until the dirt is removed.

Rinsing

The temperature of the rinsing water should be the same as that of the washing water. Sufficient quantities of rinsing water should be kept ready, as thorough rinsing is essential. If soap is left in the fabric, will damage the clothes and give out a bad smell.

A little citric acid or glycerine may be added to the last rinsing water.

The water should be squeezed out by pressing the garment between the palms. A wringer may be used for heavy woollen articles.

Drying

After removing the moisture, the garment should be placed on the newspaper on which its outline had been marked, and pulled back to its original shape, having the outline as a guide. Woollen articles should not be dried in the sun since the texture of the fabric is affected by heat. Hence washed woollen clothes should be dried in a shady place where there is good draught. Heavy and large articles could be hung for drying, but small and delicate articles should be dried on a flat surface.

Finishing/pressing

Woollens in general are finished by pressing while slightly damp. If dry, a damped muslin can be placed over them and pressed. A hot iron should not be used. Woven fabrics may be ironed lightly.

Airing

The articles should be thoroughly aired before storing.

WASHING AND FINISHING OF SYNTHETIC FABRICS

Nowadays many clothing materials are made of mixed fibres. Artificial or synthetic fibres are available in the market, such as rayon, nylon, terelyne, polyester, mixture of silk and wool, rayon and wool, etc. A housewife should have the knowledge of handling non-cotton or synthetic clothing.

RAYONS

Rayons are artificial fibres derived from cellulose. They have no natural elasticity. Their stretching in the process of laundering might tear the material. Therefore in cleaning rayons care must be taken to maintain the shape and appearance of the material. From appearance alone, it is difficult to judge the type of rayon, so it is advisable to follow a general rule. e.g. *Avoid steeping, heat, application of strong chemicals and alcohols.*

Washing

1. Rayons are washed in the same way as silks. Mild soap and soft warm water should be used. Hot water should not be used. Make sure that the soap is dissolved and sufficient lather is formed.

2. Do not soak, boil or use bleaches on rayon.

3. Do not rub or twist. Rayons loose about 50 per cent of their strength when wet and should be considered as a delicate fabric.

4. Soiled parts should be carefully rubbed with soap lather but rubbing with a soap cake should be avoided.

Rinsing and wringing

Rinse twice using lukewarm water till the latter is completely removed. Squeeze the fabric between the palms of hands to remove the moisture gently. Do not wring rayons by hand as it is very dangerous, specially for knitted fabrics, because by this their shape will be completely spoiled. It is not harmful to use a rubber wringer for this purpose.

Drying

Dry rayons away from sunshine or heat. Rayon articles should be spread out in the proper shape to ensure even drying by air. Uneven drying may cause water marks. If the article is hung for drying it should have its weight equally distributed on both the sides. Clips should be used.

Ironing

Avoid pulling or stretching rayons while ironing. Iron on the straightwise yarns. Electric or charcoal iron should be carefully used. Iron the rayons with a moderately hot iron on the wrong side. Never sprinkle water on the article. If dampness is not sufficient, then iron the article with a damp muslin spread over it. Edges, hems and other double parts should not be ironed first. This may cause the main parts of the articles to be stretched. The main parts of the article are ironed first.

Airing

Airing is an important process in finishing the rayons. Rayon articles after ironing may appear dry, but may contain some moisture. If the moisture is not removed it will spoil the good finish and make the texture limp. Hence a thorough airing of the article is necessary.

NYLON

Nylon is another synthetic fabric which is gaining popularity nowadays, comparatively cheaper to use due to its convenience in washing. Moreover it is attractive and nylon fabrics are much easier to wash as nylon fibres when dry are stronger than any other natural or artificial fibres. The surface of nylon is smooth and hence resist dirt and easy to launder.

Washing

For washing nylon articles use lukewarm water and make a lather with soap flakes or soap solution. Those soap solutions which contain fluorescent whitening compounds are useful for washing white nylon to preserve its brilliance. Knead and squeeze the garment in the water gently. As it is easily cleaned, rubbing is not necessary.

Rinsing

In case of nylon careful rinsing in warm water is important. White nylon should not be washed with other coloured articles as it may pick up colour from the water or even dirt from other fabrics.

Drying

While drying nylon clothing, strong sunlight is avoided. Dry outdoors in shady airy place.

Finishing :

Nylon fabrics should be ironed at a very low temperature.

STORAGE OF CLOTHES

Clothes give better service when well kept than when neglected. In order to keep up a good standard of personal appearance one should keep one's clothes in good condition. They should not be allowed to get too dirty. Dirty and soiled clothes are a veritable asylum for disease producing germs. One should never let clothes get too dirty or let them remain unwashed for too long. As perspiration has a bad odour and a deteriorating effect on fabrics. Such clothes should be carefully washed before storage.

Clothes should be taken care of so that they will last long and will always look fresh and pleasing. Clothes should not be kept on the floor or on a chair if, there is a place to hang them. It increases the need for their pressing, washing and cleaning, clothes that are carefully folded and put into a box or almirah will not only last longer but also look better when worn.

For reasons of health, clothing should be worn clean, change as often as possible and washed frequently and systematically. If the clothes are not used regularly fold them and put away smoothly and carefully. All the clothes should be taken out and dried and exposed to air several times during the monsoon. If it is not done, they will get damp and will be attacked by mildew which will eat away the surface of the cloth and leather.

Repellents such as tobacco, dried neem leaves etc can be used in the storage. Naphthalene balls and Odonil etc are also quite effective. Even camphor is considered to be useful.

Woollen clothes or garments are costly. Their upkeep and storage during the off season is very important. Moth is the greatest enemy of woollen garments. If storage of such clothes is neglected these little insects can ruin thousands of rupees worth of clothings in a short time and thus cause great loss. Newspaper can be used for wrapping woollens as moths dislike printing ink.

If clothes are to be stored for long time, one must keep changing their folds as some clothes can crack at folds. Never store starched clothes for a long time. Soiled clothing items should never be stored, for it has many disadvantages. The stains may become set and permanent, it is more easily attacked by moths, insects and mildew Mend of all tears before storing to prevent tears from becoming larger.

Clothes should not be kept in damp condition. Moisture causes mildew which may damage the clothes. So storage should be done in dry condition. The cupboard or storage box should be lined with paper or old clean cloth sheet.

QUESTIONS

A. VERY SHORT ANSWERS:

1. Why do clothes tear quicker when given to a dhobi ?
2. Why are white cotton clothes starched and blued ?
3. What advantages has cotton over silk for everyday wear ?
4. What is the favourable temperature for washing wool ?
5. Why should woollens be dried on a flat surface ?
6. Why should very dirty cotton fabrics be soaked ?
7. What type of water is most suitable for washing woollen cloth ?
8. Of what use are the following in laundry work–
   javelle water, soap, gum arabic, soap jelly.

B. SHORT ANSWERS:

9. What kind of a tree is Rita-nut and for what purpose is it used ?
10. Prepare hot water starch.
11. What is the use of a suction washer ?
12. Write short notes on–
    Blue, soap, stain, stiffening agents, dry-cleaning, sink, tub.

C. LONG ANSWERS:

13. State the different types of reagent used in laundering.
14. Give in detail the equipment required for a laundry room.
15. Write about the preparation, method and use of cold water starch.
16. State the general rules to be followed in stain removal.
17. Define stain. Write the different types of stain.
18. Write the method of Washing a woollen jumper and removing the lipstick stain from white cotton handerchief.
19. Give the correct method for washing a silk garment.
20. Name the different types of soap. What qualities should a good soap possess ?

UNIT-XI

QUALITY CHECK OF APPARELS

Workmanship of ready-made, tailor-made and home-made garments

The basic necessities of man are food, clothing and shelter. To protect himself against cold, heat, danger etc. man wears cloth. In the older days men used to wear clothes made of leaves, bark of trees, animal skins etc. But as time went by, the invention of machineries, the technology of textile came to be known. Since then fabrics of different varieties have been manufactured.

People have come to know the art of dressing. As the saying goes "God created man but men create clothes", the different styles in dress can be created with the change of time, both men and women have become more career oriented. They want clothes which take less time in stitching but at the sametime look smart, less costlier and well designed.

The big mass of women in our cities do not have the time nor the inclination to go gadding about for fabrics first and then go to the tailor to stitch it. Instead they are getting the habit of going to the nearest shop to pick up a suitable outfit whatever their preferences might be. These are the fashions of convenience specifically designed for women in the fast track. Both men and women, people of all generations have become very fashion conscious. Some go for western outfits, trendy, casual etc., others go for traditional clothings etc. But together they have sizes and colours for all age groups. One can easily pick up any of his or her choice.

There are three important sources by which garments can be acquired. They can be made at home, can be given to tailor or can be acquired as ready-made.

While selecting garments one should keep in mind the following factors

1. Income

Selection of clothing or garments is really done according to the income of a person. If a person's income is more then he or she likes to look more rich, glamorous, young and modern. If the person's income is less then he or she likes to be economical in selecting clothes for self.

2. Age

Clothings are generally selected according to the age of the wearer. Young person always like to wear clothes which are in fashion where as old people generally like to wear only those clothes which suit them.

3. Knowledge

While selecting garments one should have certain knowledge regarding colour, texture, design, style, pattern and so on and also one should know which kind of clothes suit them best.

4. Occupation

Dresses are generally selected by people according to their jobs, where uniforms are not required. Employees like to dress for work in keeping with the current style and also look respectable. If uniforms are required for jobs like nurse, doctor, airforce, bus conductor etc. are required to select appropriate colour and design of clothes which is selected by their employees.

5. Society

People generally adopt the style of dressing which is prevailing in their society. If their society is of high class then people of middle or lower class also like to select clothes which people of high class wear.

6. Function or occasion

Select clothes which suit the occasion like party wear, sports wear, clothes for travels, for picnics, for themselves.

7. Religion

According to their religion people generally select dresses for themselves. For example, people of Muslim community select those clothes which are commonly followed by their community. People of Hindus as well as Christianity religion also do the same thing according to their respective religion.

8. Season or climate

To be appropriately dressed one should consider the season of the year and select the clothes accordingly. Such as for monsoon rain coats, for summer cotton dresses and for winter woollen garments.

9. Likes or dislikes

One should always select clothes according to their liking and also should see to its suitability. If dresses are not selected according to their personality then it shows their bad taste in selecting clothes. One should consider colour, design, style of garment etc. before selecting a garment and should give importance to his or her likes and dislikes.

10. Fashion

Selection of clothing should be done according to changing up of fashion. One should always be aware of the prevailing fashion and should select garments which suit them best and see that it is in fashion.

11. According to the budget

Before selecting any garment, it is better to make budget as it always solves problem which generally creates while purchasing clothes or after purchasing. If budget is ready then it becomes easier in selecting clothes.

HOME-MADE GARMENTS

Home sewing remained as individual endeavour until 1863, when Ebenezis Butterick a tailor and shirt maker in trade, in collaboration with his wife, put on the market a set of shirt pattern. Manufactured clothing has gradually replaced home-made garments. There are evidences that women today are sewing more for creative expression than formerly.

Today labour is a big item in the production of anything and clothes are no exception; styling, cost, money and designing clothes that will actually improve one's appearance and expresses one's personality. The clothes she makes herself can be of a fabric whose texture and colour is becoming and from a pattern whose lines are suited to her figure. She has the advantage of making a better fitted garment, as well as the personal gratification of having created an attractive costume. Beyond that she has the satisfaction of being a model on any one else. All the money saved by making clothes at home may be spent on additional garments or on more expensive accessories.

A good pattern, well fitted before cutting, correctly cut and carefully followed according to directions should produce a satisfactory garment for the beginner without any difficulty. Select a simple style and follow directions carefully. Analyse the completed garment to decide where and how can she improve the next one. Keep on trying and with practice will soon become an expert.

Merits :

1. Making durable and attractive garments at home is one of the means of saving one's money available for clothing.
2. With the ability to sew well, one can have better quality of material and better workmanship for less money.
3. If enough money can be saved by home sewing it may help in meeting other needs and desires.
4. It motivates home maker to construct more garment creatively.
5. It is a means of expressing talent of the person involved.
6. It is a leisure time activity and means of developing interest.

Demerits

1. It requires more time, adequate equipment and space, need more energy.
2. One needs to know the techniques involved in sewing.
3. Unless the person making them has developed skill in choosing design and in construction processes they are likely to look unfinished when contrasted with the style of ready-mades.
4. The finish of home-made garments are less appealing and may be disappointing when completed.
5. Special equipment is needed for special finishes.

TAILOR MADE GARMENTS

Tailoring is the work or workmanship of a tailor. All beautifully tailored garments are in reality a true work of art.

It may be more satisfactory to buy material and have it done by a dress maker who has the ability to plan. This plan may be as expensive as buying the ready-made garment, but it will have better quality of workmanship. It is less expensive when compared to ready-made dresses, depending on the dress maker's fee and cost of fabric, pattern and trimmings.

Sometimes women have a feeling for designing costumes but have no skill in construction, so they employ a dressmaker to execute their ideas. The skill of the dressmaker of course will determine the effectiveness of the finished garment. The results can be rewarding or disappointing.

Merits :

1. Since tailor made garments are skillfully planned and done, these are more durable than that of home constructed or ready made garments.
2. It is less expensive.
3. New styles can be created.
4. The idea of the individual can be becomingly changed into a dress by a good tailor which is impossible in ready-made garments.
5. The life of the garment is assured if it is a tailor-made garment.

Demerits

1. Only a good tailor can construct garments successfully with all the ideas of the client or customer.
2. It is much time consuming, takes weeks to complete a dress depending on the demand.
3. There is every possibility of the tailor cheating the customer.
4. Attractive designs and special finishes will not be always possible.
5. Seams applied may not be durable.
6. Communication problem may cause ill-fitted garment.

READY MADE GARMENTS

No girl in these days has the time or inclination to make all her clothes. Ready-made clothing had its beginning in U.S. founded by George Apdyke, There were several manufactures of medium grade, ready to wear clothes, however the quantities produced were small and everything was done by hand. Later tailors and dress-makers began to sell ready-made clothes about 1875 to 1880. Few women made all their clothing. Lack of time or skill may prevent one's making every dress. Ready mades are the joy of a stream lined life, but they should be selected carefully in order to get the most suitable garment to be bought.

All types of ready-made clothes are available. Some are expensive high-fashioned models of luxurious fabrics, others are medium priced, well designed of good quality fabrics and still others are cheaply made in large quantities of cheaper fabrics with less attention given to workmanship. In order to get the exact dress which is right, many factors shall be considered.

1. Is the garment cut on the grain of the fabric. Garments sometimes do not fit properly, that is the garment is on off-grain and so will not fit properly and uncomfortable to wear. No amount of alterations can correct a badly cut garment.
2. Do stripes run true or they are off-angle and poorly matched. All nap fabrics should be cut with pile or design going on the same direction.
3. Seams may not be matched with the particular dress we buy and sometimes we should see that whether up and down seams hang perpendicular to the floor. Is the side seam of sufficient width to enable some alternations. Better dresses have generous seam with straight stitching while inexpensive one may have narrow seam which tend to twist and pull out. Check width of side seams to hip lines. Manufacturer who make good seams are usually careful to use well matched thread of ample strength. To save cloth a manufacturer may add extra seams, while checking particular care should be given to curved seams as sleeves, neckline etc. If these have been hurriedly or carelessly made, fitting and dropping are disturbed.
4. Does the zipper open and close easily, How are hooks and eyes sewed on, otherwise we have to sew them once again. Button holes should be carefully cut on straight of the goods. Good quality button holes are essential because they often are located on centre front of a garment.
5. The style of a garment is important. But we should know that if the fashion has been carried to an extreme we may be confident that its future is short. Even if a style is popular avoid it, if it is not flattering to the wearer and should buy something more becoming.

Attractive garment can be easily purchased in the market and are ready for immediate use. An added advantage to the wearer is that one can analyse how a garment looks on him before investing any money. Different types can be tried on to judge which will be the most suitable.

In some cases fabric and construction almost preclude home sewing. The construction techniques are difficult and sometimes impossible to reproduce at a cost comparable to ready-made garments.

Merits

1. Most men and women find it necessary to supplement their wardrobe with ready-made clothes because they are ready to wear, market has many sizes for different figure types.

2. Improvement, wide choice of styles, fabrics and the ease in buying has encouraged home makers to purchase ready to wear apparel.
3. Time cannot be saved by constructing garments, so home maker chooses ready to wear.
4. Attractive garments can be purchased, immediately when ever we want.
5. Judgement can be done then and there immediately.
6. Ready made garments are appealing and are available for different prices for various income level.
7. It provides an opportunity to get garments of good quality by wise selection.
8. Consumer credit has been on active force in the rise of ready-made garment consumption.

Demerits

1. Ready made garments often need expensive alteration.
2. It is often difficult to find a ready-made dress that is satisfactory in every detail and at price one can afford to pay.
3. Less attention is given to workmanship.
4. One might restrict to an unsatisfactory garment because of the cost.
5. These are less durable when compared to home-made and tailor-made garments.
6. Proper seams and finishes may not be available.
7. It may not satisfy to the consumer's taste and idea.
8. They often do not fit well to the wearer.

READING LABELS ON CLOTHES

The purchasing of materials on a basis of quality and suitability is well illustrated in the methods used by the United States government in the purchasing of textiles as well as other articles. The Federal specifications Board works out specifications covering the minimum requirements for the fabric in question.

The specification for textiles include such items as fibre content, type of construction, colour, weight, number of ends and picks per inch, breaking strength, yarn size, colour fastness and the like.

The materials are tested at the Bureau of standards, which was established for the purpose of serving the individual consumer as well as the various departments of the government. Here all tests are made according to definite rules and regulations, in a laboratory where the temperature and humidity are held constant at standard conditions.

Materials even though produced according to specifications, when subjected to actual use do not always prove satisfactory. In such cases research is carried on and in time new specifications are formulated. The consumer ultimately reaps the benefit of any improvement in quality or reduction in costs which results from the co-operation of the Bureau of Standards and the industries.

The producer must make tests of some kind before he can guarantee his material or place his name on the fabric. As only the better grades are labelled, and as the involved cost, the slightly higher price of labelled or guaranteed fabrics is explained. An important part is the conducting of investigation to determine the needs of the consumer and to assist in obtaining satisfactory materials to meet the consumer's needs.

Broadly speaking, what the consumer wants to know may be summed up as follows–

1. What is the product made of ?
2. What will the product do or perform ?
3. How should it be cared for- washed, handled, etc.

Quality shown by labels

Everyone is interested in obtaining merchandise of good quality at a fair price. In order to have assurance of quality in the manufactured goods it is necessary to have definite specifications of material, construction and workmanship. This statement would be accepted by manufacturer, retailer and consumer, alike. There are at present four distinct theories as the most effective means of furnishing information to the consumer through the labelling of the textiles, namely- Informative labelling, the use of brand names, grading and certification.

Informative labelling

Informative labels furnish information concerning the characteristics of the article that affect its appearance and service qualities. The information given may be a description of the article itself, including fiber content and special finishes, or it may be in the form of directions or precautions as to its use and care. Informative labels tend to increase the sale of good quality merchandise as they increase the desirability of honestly labelled products. Satisfaction gained from well chosen articles results in repeated purchases. Many labels serve as an advertising medium rather than as a consumer aid. If the information carried on the label includes a guarantee of performance, backed by the name of the manufacturer or finisher, the consumer can buy with assurance of quality. If special precautions are necessary in its care these should be cited.

Brand labelling

The labelling of fabrics with brand names is a well established method and is used widely by the manufacturer as an aid in advertising his products. A study of the advertisements in any magazine or paper will show that this method is used more than any other. A 'trade mark' is a word, picture, or symbol used by the company to mark all its products and the brand distinguishes between the qualities of goods it offers for sale. The branding of a product indicates that the company producing it has faith in the product and is willing to spend money and effort informing the public of the special advantages of this particular article.

Competition in merchandising and advertising tends to compel the manufacturer of branded goods to build up and improve a quality product. The ease with which a branded article can be identified for repurchase if desired is an advantage to the satisfied consumer and to the company putting out high quality merchandise. However, this type of a labelling is of no value to the person having no experience with the brand.

Grade labelling

Grade labelling by which articles are labelled according to minimum specifications of quality necessitates not only standardisation but also some type of organization to check on the merchandise and enforce the rules set up. Grades are established on a basis of minimum quality. Quality or performance and there is little or no incentive to produce merchandise. Unless some government, organization establishes the grades and publishes detailed descriptions for each with rules for their enforcement, there would be no assurance that grades of different manufactures would be of the same quality. Grade labelling is seldom used in the merchandising of textiles.

Certification

Certification of fabrics by certain independent textile testing laboratories is considered to be a consumer service approaching the government method of purchasing. No information is given on the label except the statement that the fabric has been tested and has met the specifications. The value of this type of labelling is determined entirely by the reliability of the testing laboratory as it alone is responsible for the qualities indicated by the label.

Testing laboratories maintained by the manufactures themselves enable them to determine the quality of the fabrics they produce and thereby label their goods as guaranteed to give certain types of performance or as "Tested" or "Certified." Such labels are of little more value to the consumer than the brand name.

The wide use of special or service finishes for many types of fabrics has increased to the use of informative and brand labelling. Some companies guarantee the performance of the finish and state the service it will give; others simply explain the qualities produced by the finish and give directions for the correct handling of the fabrics.

QUESTIONS

A. VERY SHORT ANSWERS:

1. What is 'Trade mark' ?
2. Define labelling.
3. What is informative labelling ?
4. Mention any one point on the demerit of home-made garment.

B. SHORT ANSWERS:

5. What are the advantages of buying ready-made garments ?
6. What are the disadvantages of tailor-made garments.
7. Name the three important sources by which garments can be acquired.

C. LONG ANSWERS:

8. Mention the different stages that undergo in the apparel industry.
9. Explain the factors to be kept in mind while selecting garments.
10. What are the special specifications for textiles according to Federal Specification Board ?

FOOD EXCHANGE LISTS

Two lists are included

1. Food Exchange List from the Diet Manual of AIIMS, New Delhi 110016
2. Food Exchange System suggested by SNDT University, Mumbai.

1. What is an exchange list ? (AIIMS)

It is a group of foods of the same caloric value and similar protein, fat and carbohydrate content that can be substituted for one another in a meal plan. Foods have been divided into six groups or exchanges. Any one of the exchange groups cannot by itself supply all the needed nutrients for a well-balanced diet. It requires all six of them put together as a team to supply the normal nutritional needs for good health. The six major exchanges are :

1. Milk exchange
2. Vegetable exchange
3. Fruit exchange
4. Cereals and pulses exchange
5. Meat exchange
6. Fat exchange

MILK EXCHANGE

1. Class (250) milk exchange or substitute contains–

Food	**Quantity**	
Toned Milk	1 glass 250 ml	Carbohydrate10–12 gm
Skimed Milk	1-1/2 glass	Protein 8 gm
Butter Milk	4 glasses	Fat 8 gm
Curds	250 gm (1 cup)	Calories 140-150
Fresh Paneer	50 gm	
Icecream	100 gm (1 small cup)	

VEGETABLE EXCHANGE

Food Root vegetables	**Quantity**	**Group A**
Arbi	40 gm	Carbohydrate 3 gm

Potato	40 gm	Protein 2 gm
Yam	40 gm	Calories 20 gm
Kachalu	40 gm	
Sweet Potato	40 gm	
Tapioca	25 gm	
Leafy vegetables		**Group B**
Spinach	100 gm	Carbohydrate 6 gm
Bathua	100 gm	Protein 2 gm
Cabbage	100 gm	Calories 32 gm
Sarson	100 gm	
Methi	100 gm	
Seasonal vegetables		**Group C**
Lauki	100 gm	Carbohydrate 6-8 gm
Tinda	100 gm	Protein 2 gm
Brinjal	100 gm	Fat nil
Cauliflower	100 gm	Calories 32-40 gm
Knolkohl	100 gm	

FRUIT EXCHANGE

Foods	**Approx. measures**		
Apple	100 gm	1 medium	Carbohydrate10 gm
Orange	100 gm	1 medium	Protein 1 gm
Banana	100 gm	1 small or big	Fat nil
Guava	100 gm	1 small	
Mausambi	100 gm	1 small	
Mangoes	100 gm	1 small dusheri or 1 big slice	
Big grapes	100 gm	20 no.	
Cherries	100 gm	20 no.	
Musk melon	250 gm	1/4 of medium size	
Papaya	100 gm	1 slice	
Peaches	100 gm	2 medium	
Pears	150 gm	4 small	
Plums	100 gm	4 small	
Water melon	200 gm	1 cup	

CEREAL EXCHANGE

Foods	Approx. measures	
Bread	1-1/2 slice (1 lb bread)	Carbohydrate 17-18
Bajra	small chapati	Protein 2 gm
Barley	1/2 cup cooked	Fat Nil
Maize	1 small roti	Calories 80-85
Cornflakes	1/2 cup cooked	
Oat meal	1/2 cup cooked	
Rice	1/2 cup cooked	
Wheat flour	1-1/2 medium chapati	
Rice (puffed)	1 cup	
Sanvai	1/2 cup cooked	
Dalia (wheat)	1/2 cup cooked	
Macroni	1/2 cup cooked	
Biscuit	5-10 salt and 3-5 sweet	
Soyabean flour	2 table-spoon	

LEGUMES AND PULSES

Foods	Approx. measures	
Bengal gram	1/2 cup cooked	Carbohydrate 15 gm
Bengal gram (roasted)	1/2 cup cooked	Protein 5 gm
Besan	2 table spoon	Calories 80 Kcal
Black/Green/White gram/ Rajmah/Lobia/Soyabean	12/ cup cooked	Fat : Nil

MEAT EXCHANGE

Foods	Approx. measures	
Mutton	4 pieces or ribs	Carbohydrate 1-2 gm
Chicken	1 leg or breast	Fat 2-4 gm
Fish	2 pieces	Protein 5 gm
Egg Hen	2 medium	Calories 65 Kcal
Paneer	40 gm	
Ham	25 gm (1 slice)	

FAT EXCHANGE

Foods	Approx. measures	
Butter	15 gm	Carbohydrate nil
Ghee	11 gm	Fat 11 gm
Oil	11 gm	Protein nil
Vanaspati	11 gm	
Almonds	15 gm	
Cashew nuts	30 gm	
Peanuts	20 gm	

2 FOOD EXCHANGE SYSTEM SUGGESTED BY S.N.D.T. UNIVERSITY, MUMBAI

Cereals : Each exchange provides 100 kcal
6-12 exchange can be taken
1 katori cooked rice
1 big or 1- small bread slice
1 katori rawa upama
1 chapati or 2 phulkas
4-5 puris
1 katori rice flakes

Pulses and Legume : Each exchange gives 100 kcal
2-3 exchanges can be taken
1 katori *dal* (cooked)
1 katori legume/usual
1 katori varan

Nuts and Oilseeds : Each exchange gives 100 kcal
1 handful of groundnuts/cashewnuts/til/almonds/pista
1/4 katori fresh coconut grated

Vegetables : Each exchange supplies 25-30 kcal
2 exchanges or more can be taken

Vegetable A 1 katori vegetable (prefably dark green leafy vegetables)

Vegetable B	1 katori any other vegetable, e.g. ladies finder, brinjal etc.
Fruits :	Each exchange supplies 50 kcal 1-2 exchange can be taken 1 fresh medium fruit (guava, apple, orange) 1/2 banana/small mango/1 sapota 1/2 glass fruit juice (unsweetened)
Milk & Milk Products :	Each exchange supplies 100 kcal 2 or more exchanges can be taken 1 glass of full milk or standard milk (unsweetened) 2 katoris of curds 1 cube of cheese/paneer
Meat :	Each exchange gives 100 kcal One exchange can be taken 1 serving of poultry or fish 1 serving of meat/beef muscle 1 serving of mutton/egg Vegetarians may substitute meat by extra exchange of legumes/pulses/milk
Fat :	Each exchange gives 100 kcal 2-3 exchanges can be taken 2 tsp ghee/vanaspati oil 3 tsp butter
Sugar :	Each exchange gives 100 kcal one exchange can be taken 5 tsp of sugar/jaggery 2 tsp of honey

BIBLIOGRAPHY

	Name of Book	Author	Publishers
1.	*Household Textiles and Laundry work*	*Durga Deulkar*	*Orient Longmans Ltd. New Delhi*
2.	*Textile Fibres and Their Use*	*Katharine P. Hess*	*J.B. Lippin Cott Company*
3.	*Domestic Science*	*The Staff of the Lady Irwin College, N. Delhi*	*Orient Longmans Ltd. New Delhi*
4.	*Fundamentals of Textiles and their Care*	*Susheela Dantyagi*	*Orient Longman Ltd. New Delhi*
5.	*Fundamentals of Home Science*	*Binita Ray*	*Steering Publishers Private Ltd. New Delhi*
6.	*Text Book of Clothing and Textile*	*Sushma Gupta, Neeru Garg, Renu Saini*	*Kalyani Publishers New Delhi*
7.	*Child Development*	*Elizabeth B. Hurlock*	*Mc. Graw Hill*
8.	*Text-book of Home Science*	*Mullick Premlata*	*Kalyani Publishers New Delhi*
9.	*Food Science*	*Srilakshmi B*	*New Age International Publishers, New Delhi*
10.	*Fundametals of Foods and Nutrition*	*Mudambi Sumati R. Rajagopal M.V*	*Do*
11.	*Food Science*	*Mudambi Sumati R Rao Shalini M*	*Wilely Eastern Ltd., New Delhi*