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GEOGRAPHY:

The word geography is of Greek origin. It has been derived from two Greek words “geo” and “graphy”. ‘Geo’ means ‘earth’ and ‘graphy’ means ‘description’. Thus in the simplest form geography means the description of the earth.

The subject matter of geography is ‘man and his environment’ or ‘lands and people’. The first person who started the fashion of describing the lands and people was a Greek scholar Hecatus. He travelled the then known world, which was confined to the area around the Mediterranean Sea. He described the lands and people of the areas travelled in his book “lies, peridos” which stand for lands and people. Thus Hecatus is known as the father of geography.

The credit of coining the word “geography” goes to Eratosthenes, who was a Greek scholar and lived in 200B.C. He also described the lands and people under the title geography goes to Eratosthenes.

This fashion of describing lands and people under the title geography continued. Scholars belonging to various countries also described the lands and people. The Greek, Romans, French, Germans, English, Polish, Americans, Arabs, Indians, Chinese etc scholars also took interest in this branch of knowledge. The different scholars defined geography in their own way. Thus the subject comprises of a maze of definitions.

1. Geography is the study of places (Vidal-de-la-Blache).
2. Geography is human ecology (Bowman).
3. Geography is the science of distribution (Marthe).
4. Geography is the study of areal differentiation of the earth’s surface (Alfred Hettner).
5. Geography is the studies of interaction between man his environment (Halford Mackinder).
6. Geography tells us what is where, why and what is it made of (Bowman).
7. Geography is the study of landscape of relationship between man the natural environment (Ratzel).
8. Geography is the study of spatial variations of phenomena on the Surface of the earth in relation to man (Geographical cgress 1908).

STRUCTURE OF GEOGRAPHY

The subject matter of Geography is man and his natural environment. On the basis of subject matter, Geography has two main branches:

1. Physical Geography.
2. Human Geography.

**Physical Geography:** - Physical Geography is that branch of geography which deals with the study of natural environment. Natural environment consists of five elements land, water, air, plants and animals.

The sub fields of physical geography are:

a) Geomorphology: Geomorphology is the study of land-forms and drainage.

b) Climatology: Climatology is the branch of physical geography which deals with the study of weather and climate.

c) Biogeography: Biogeography is a branch of physical geography which deals with the study of distribution of animals and plants on the surface of the earth.

d) Soil Geography (Pedatology): it deals with study of development, characteristics and distribution of soils.

e) Hydrology: it is the branch of physical geography which deals with the study of occurrence, properties and distribution of surface and ground water.

**Human Geography:** - Human geography is a branch of geography which deals with the study of man and his activities on the surface of the earth in relation to environment.

Man does three types of activities on the surface of the earth.

Firstly, man lives on the surface of the earth

Secondly, man makes a living and

Thirdly, man makes design for living.

On the basis of the subject matter human geography is divisible into three branches:

a. Social geography.

b. Economic geography.

c. Cultural geography.

**a. Social Geography:** - It is a branch of human geography. It deals with the study of special arrangement of social phenomena in relation to total environment.

The sub-fields of social geography are:

i) Settlement geography (rural and urban).

ii) Population geography.

iii) Political geography.

iv) Medical geography.

**b. Economic geography:** - It is a branch of human geography which deals with the study of special variation of economic activities on the surface of the earth. It also studies the
variation between economic activities of the people and the relation between them and the natural environment.

The sub-branches of economic geography are as under:

i. Geography of resources.
ii. Agricultural geography.
iii. Transport geography.
iv. Industrial geography etc.

c. Cultural geography: - It deals with the study of distribution of cultural groups and the interaction between them and their environment. The sub-fields of cultural geography include
   i. Languages
   ii. Religion
   iii. Tools and skills and
   iv. Social organizations.

Based on the methods i.e. how geography is studied this subject can be divided into two branches:

1. Systematic geography.
2. Regional geography.

1. Systematic geography:

   When we study a specific geography factor throughout a large area a throughout the globe, our approach or method is systematic i.e. rainfall, its types and distribution or soils.

2. Regional geography:

   It is the branch of geography which deals with the study of a character of areas, which is the result of integration of all phenomena present in that area.

TECHNIQUES IN GEOGRAPHY

There are two main techniques of study the geography of an area:

1. Cartography: It is the science of drawing maps and charts.
2. Remote sensing: It is the use of air crafts or satellites to gather the data about the surface of the earth.

**IMPORTANCE OF GEOGRAPHY**

Geography is the study of man and his environment. It tries to understand action of man and his environment. Its utility and usefulness is being realized in every walk of life. Geography establishes a link between natural sciences and social sciences. Both scientists and humanists seek to include something of geography within their respective studies. Geography is science and an art. It tries to train and develop good citizens. The importance of geography can be studied under the following heads:

1. *Knowledge of Environment*: In these days life is very complex. It is highly desirable that one should be acquainted with the knowledge of environment with in which one happens to live. One gets the knowledge of his environment through the study of natural and social science. But these subjects only deal with a particular aspect or feature of environment. But geography presents an integrate picture of natural and social phenomena. It deals with the study of interaction between man and his environment.

2. *Knowledge of Why and How*: Until very recently the study of geography implied a catalogue of names and a student of geography felt quite satisfied if he could commit to memory such facts as names of continents, countries and their capitals, oceans, bays, rivers, mountains, etc. the students seldom attempted to understand why and how of these all these facts and factors that go to influence life of man on this planet. Today geography is a dynamic science. It tries to find out cause and effect relationship. It deals with the natural and social aspects of the earth in order to acquire the knowledge of the surroundings within which man lives.

3. *Creating Understanding*: Geography is the study of areal differentiation of the earth’s surface. No two areas on the surface of the earth are alike. the people who are settled in different areas speak different languages practice different religion, wear different dresses, live in different house types, eat different foods belong to different races, have different statures, facial form, hair form and color. All these differences are because of different environmental conditions. Geography teaches man that although we are not identical but we are equal. It develops broadmindedness, tolerance, sympathy, cooperation, unity, we feeling and other social qualities. It makes students better and responsible citizens of the country and the world.

4. *Satisfies Natural Curiosity*: Everybody in this world has a natural curiosity to know about the different countries and their inhabitants. Geography is the study of land people. The knowledge of geography helps us in satisfying this curiosity without visiting them.

5. *Developing International Outlook*: Modern world is a global village. This has been possible because of instant means of transport and communication. If there is war in any part of the world, its impact is felt throughout the world. The recent America-Iraq war led to like in the prices of petroleum product not only in America and Iraq but throughout the world, no nation or society can progress in Isolation. The interdependence of the present day countries of the world is more than what was in the past. The present day life is complex, the needs have multiplied...
and no nation of the world can fulfill its needs by her. It is dependent on other nations of the world, because the distribution of the resources on the surface of the earth is uneven. Geography which deals with the study of the world pleads that the progress and prosperity of the nations of the world does not lie in confrontations and wars but in mutual understanding and cooperation. The people of the world have to share the resources, knowledge and technology. Therein lays the progress of the nations of the world. Thus the study of geography creates international outlook.

6. **Understanding Problems:** The knowledge of Geography can be made to provide basis for understanding of many social, economic and political problems. The knowledge of geography helps a student in developing proper social outlook. It develops social qualities like broadmindedness, sympathy, tolerance, selflessness, fellow feelings, cooperation, unity. It helps a man to become useful member of world society. It helps a student to know about the varied cultures of the world which are varied because of different geographical conditions. Geography has political importance. It studies the different political divisions and the problems faced by these divisions because of different and geographical locations and surroundings. Geography helps a man to know about the economic resources and their efficient utilization and conservation.

7. **Helps in Understanding Other Subjects:** Geographical knowledge helps a student in understanding other subjects like botany, zoology, pedagogy, agricultural sciences, history, economics, sociology, demography, anthropology etc because geography is partly natural science and partly social science. It establishes a link between natural science and social sciences. It is an integrated discipline.

8. **Administrative Importance:** The knowledge of geography is indispensable for administrator to run the administration effectively. The people belonging to different parts of any country face different problems because of different environmental conditions. Geography also helps in planning and development.

9. **Helping in All Round Development:** Geography is an intellectual discipline. It helps in the cognitive, effective and psychomotor development of a student. It affects man’s mind, character and physical abilities. It develops critical faculties and helps in the development of personal qualities of the pupils. The study of geography enables the students to acquire aesthetic sense to praise the beauties of nature. The study of geography enables happy adjustment of oneself to one’s environment because one can fully appreciate the order of nature.

10. **Playing Part In Planning:** In modern days the geography has an important part to play in connection with town and country planning. The knowledge of geography helps in urban and regional planning.

11. **Conservation of Economic Resources:** World is divided into seven continents. The continents are divided into countries. The resources are not uniformly distributed. These are unevenly distributed. Some countries are rich in mineral resources, some water resources, some soil and some rich in forest resources. These resources are indispensable for the progress and development of the nations. For the progress and prosperity for the mankind we have to share these natural resources.
Some resources are exhaustible i.e. mineral resources. Mineral resources especially coal, petroleum and iron ore are getting depleted fastly. Their reserve position is not large to meet the future demands. The large scale use of petroleum has led to oil crisis in the world. Geography pleads these resources should be used judiciously and efficiently and steps must be taken to preserve these resources for the future generation. If these resources will be exploited at the present rate there will be nothing left for the coming generation and human civilization is bound to perish.

**SCOPE OF GEOGRAPHY**

Scope is the breadth, comprehensive, variety and extent of learning experiences, to be provided through a programme of teaching experiences.

In the words of F.Kingdom ward,“The scope of geography is as wide as earth. It overlaps the boundaries of many subjects such as geology, botany, physics, economics, sociology, anthropology, mathematics, and environmental sciences etc; all of which are important branches of knowledge in their own right. It is a subject which establishes a link between natural and social sciences. Geography is an integrated discipline.”

Geography has assumed very wide dimensions. It draws materials from almost all natural and social sciences. An attempt is made to find cause and effect relationship between various geographical factors. Geography is a subject which studies the process of adjustment as well as various activities which is not influenced by geographical factors.

Geography begins on the earth’s surface and extends into the earth and higher above in the atmosphere. It deals with the constant development of human activities and the constant change in the physical factors. It studies various physical features and whether phenomena because these exercise a great influence on the life of man- his health, occupation, food, clothing and social customs and beliefs. It studies the interdependence of man and men and nation. Geographical knowledge develops patriotism and international understanding. It teaches us that world is a global village.

It is geography alone that studies the areal character of the earth. These areas are distinct and different from one another. Geography is interested in the distinctive character of these areas. He wants to know the form, the content and the function of these areas and their relationship with one another.

Hartshone is of the opinion that geography is neither a physical science, nor a purely social science. Zoe A Thralk calls it a physic-social science of all the disciplines mans well being has been the concern of geography.

Geography makes a sizeable contribution to the field of social and economic planning. Geographers have attended to such problems as coastal erosion, flood control, water supply and land classification.

Geography consists of large number of sub-fields and fields of specialization like geomorphology, climatology, soil-geography, hydrology, biogeography, economic geography,
cultural geography, social geography etc. All these facts indicate that geography is full of scope and importance.

**GEOGRAPHY AND INTERNATIONAL UNDERSTANDING**

All these acts which influence the mind character and physical abilities of an individual are termed as educational understanding.

Education is a lifelong process. Man learns from cradle to grave. The aims, structure and content of education changes with the change in time and change in society.

There has been tremendous explosion in the field of science and technology. The welfare of man is not confined to the national boundaries only. The whole world is so closely interconnected that no country or nation can dare to live alone. As a result of interconnection, the conception of “universalism” “international understanding” “world citizenship” and “co-existence” etc are being emphasized by the philosophers and leaders of the world. Services of education are to be utilized for the spread and development of these conceptions. Hence the development of international understanding has become one of the aims of education.

**CONCEPT OF INTERNATIONAL UNDERSTANDING**

“International understanding is to learn to respect all men, whatever they are; learning to consider persons living in other countries or belonging to their civilization as human beings and finding how they live, eat, dress, work and play.”
The term “International understanding” implies the presence of good will and spirit of co-operation among men and nations of the world. For peace, progress, and prosperity world requires unity, solidarity true brotherhood, co-operation, co-existence, tolerance, we feeling and friendship among the nations of the world.

**NEED FOR INTERNATIONAL UNDERSTANDING**

The need for International understanding can be discussed under the following heads:

1. **DISASTROUS RESULT OF WAR:** So far two world wars have been fought world war first lasted from 1914-1919 and the world war second was fought from 1939-1945. Every war has left in its wake hunger physical sufferings, economic chaos and sense of fertility among the people. The most destructive war in history, the Second World War multiplied these problems. It was felt that if the world is to be saved from the impending disaster; all the nations of the world must commit themselves unequivocally to world order in which no nation is allowed to repudiate peace.

2. **FEAR AND INSECURITY:** Experience in World War II, made people all over the world, fearful of the consequences of another international conflict. The fear of untold sufferings and immeasurable destruction and devastation which an atomic war may bring in its wake, has compelled the modern man to think of maintaining international peace and security at all costs.
Falling in the hands of unbalanced modern atomic weapons may cause thousand times bigger Nagasaki and Hiroshima. The chief aim of U.N.O is” to save the succeeding generation from the scour age of war”. This twice in the last century has brought untold sorrow to mankind”. This is possible only if nations seek to solve their differences and disputes through peaceful means and mutual understanding.

3. **ECONOMIC REASONS**: No nation of the world is economically self sufficient. All nations depend upon one another for resources and markets. In the modern world the life is very complex. No nation can prosper and progress in isolation. The physical distance among the nations of the world has been removed as a result of modern means of transport and communication. Sources of raw materials have multiplied and markets have expanded. Economic inter-dependence and inter-relationship demands international understanding.

4. **HUMANITARIAN REASONS**: on humanitarian grounds also there is need for mutual understanding on international level. Human nature is some everywhere. Recent researches in anthropology, sociology and psychology have proved beyond doubt that co-operation and not aggression is the real nature of man. This realization has compelled us to replace comparative society by co-operative ones. There cannot be lasting peace if one past is highly advanced in civilization and culture and another utterly backward and uncivilized and if one part is economically prosperous and other is not provided with base necessities of life. Personal liberty, freedom, dignity, respect and good standard of social and economic life must be guaranteed to all human beings. These considerations have compelled the nations of the world to prepare a declaration of fundamental human rights and chalk out an educational programme for preparing children to live in a world community.

**ROLE OF GEOGRAPHY**

Geography studies lands and people. It is a synthetic science. It studies natural environment which is the subject matter of natural understanding. On the other hand, it deals with the study of man’s activities, his society and culture, his economy and habitat, which is subject matter of social sciences. Thus geography is a link between natural and social sciences. It studies man and the natural conditions under which he lives and earns his living. It presents a true picture of natural and manmade phenomena of the surface of the earth. It plays an essential role in promoting international understanding and surpasses other subjects in this regard. Its importance in developing international can be discussed under the following heads:

1. **Knowledge of the World**: Geography is a chorological science or space science. It develops in the child sense of space, just as history develops in him the sense of time. Both these qualities are necessary for the right comprehension of the world. Geography provides accurate knowledge of lands and people to the students. The knowledge gained by the students through geography helps him to understand the conditions under which the people of other lands live and work. It widens his mental horizons.

2. **Primary Needs**: The natural environment offers its gifts in the form of natural resources. Man exploits these resources for his good life and living, but the rate at which these
resources are utilized varies from country to country and region to region. The utilization of these resources depends upon his number, economy and stage of technological advancement. This is the common Endeavour of mankind, irrespective of the fact, whichever part he has occupied. All the people have similar basic needs (like food, clothing and shelter) and they are involved in constant struggle to find ways and means of satisfying them. Here we share the experiences with other countries of the world. The sharing of experiences takes place between advanced and the developing nations and also between developing and underdeveloped countries. Increased yield of food crops, problems involved in dry farming, oil exploration and the like are some of the many fields, where nations share their experiences.

3. **Interdependence:** Relief and climatic conditions combine together to give rise to varying environments in different parts of the world. Each part specializes for the cultivation of specific crops for which it is best suited. Similarly different countries are endowed with different mineral wealth in varying proportions. A study of the geography of the world presents a true picture of a country or a region in this regard and reveals the interdependence and complementary nature of each unit. The exports and imports of a country indicate its areas of surplus and insufficient production. The disparity in the level of production and consumption is the basis of international trade. This interdependence is increasing day by day. No country of the world is self sufficient in its requirements.

Thus the teaching geography makes us understand the international co-operation is the secret of peace, progress and prosperity and hence international understanding is the main objective of teaching of geography.

**HOME GEOGRAPHY**

Geography is the study of man natural environment. Its subject matter is concrete. It can be seen and studied anywhere on the surface of the earth. Its subject matter is realistic.

The psychological and scientific way of teaching geography is to start from local area or home area. Then geography of state needs to be taught. Home state must be followed by the geography of home land and proceed gradually outward towards the world. The significance of such a procedure is that we start from the area which can be seen and studied directly on the basis of observations made in the local area we can understand the geography of far of lands without any difficulty by comparison. This procedure is logical, scientific and psychological.

This procedure is based on the laws of psychology, particularly law of analogy and law of association. The law of analogy states that “an individual responds to new situation on the basis of responses made by him in the similar situation in the past”. New knowledge is linked with the existing knowledge of the mind through association.
HOME AREA:

Home area or local area constitutes that a part of the earth’s surface, where the pupil lives and grows, with which he is in daily contact, where he sees the physical processes at work where he sees the people living and earning their living. Home geography is the study of local area or home area.

Home area serves as geographical laboratory. In its geographical facts, concepts, phenomena and interrelationships can be studied directly.

SIZE OF HOME AREA:

The size and extend of local area depends on the nature of local area. The local area may be either urban or rural. It also depends on the age of the student.

At the elementary stage local area can be a school neighborhood, or the area which lies between the home and the school of the pupils. Here the observations can be carried out during the period meant for geography teaching. In the higher primary classes it can be entire village or award in a city. As the children reach the middle and high stage, in a secondary school, the home area expands into a home region and includes a block, tehsil, district or even the province or state.

SIGNIFICANCE OF HOME GEOGRAPHY:

Local geography or home geography has great significance in the teaching of general geography. Let us study it under the following heads:

1. **TRAINS IN METHODOLOGY:** Every discipline has its specific methodology and students may be suitably trained in it. The main aspects of geographical methodology are:
   
   i. To observe,
   
   ii. To record and
   
   iii. To interpret.

   This procedure is to be put to practical use during the study of home geography. It provides pupils with ample opportunities to get training in geographical methodology.

2. **DEVELOPS VOCABULARY:** Every subject is characterized by its specific vocabulary, which gives it precision and definiteness. Geography is no expectation to this rule. Since most of the terms of geography are concerned with natural environment, no amount of explanation, alone can make these meaningful for an average learner. They are to be seen to understand. If students are
given chance to observe the various processes, facts, phenomena, and features in the local area, he will acquire a great deal of geographic vocabulary.

3. **STANDARD OF REFERENCE:** Like other subjects, while teaching a teacher must proceed from known to unknown. In geography teaching, known area is home region. In this connection it becomes the focal point of study. In his day to day teaching a teacher has refer to some facts, and features in order to make the students understand the geographical facts and figures of far of lands. The local region becomes standard of reference for teaching and learning of geography. It makes geography teaching easy and interesting.

4. **OBSERVE RELATIONSHIP:** Home geography provide a direct learning experience to the pupils. In the home region he is observing the relationship that exists between the elements of natural environment and also between the natural environment and cultural environment. For example, he relates the soil depth with slope and soils to vegetation and land use. By finding the relationship, he is working out the geography of the local area. On the basis of experience he can easily understand how geography of other areas has been attempted. He also attempts to find out the interaction between man and his environment. He will also investigate how and in what way local area is different from other areas.

5. **SENSE OF REALITY:** If geography teaching is confined to four walls of class room, the children will get an impression that it is something, which has place only in books. Home geography or local area provides pupils with an opportunity to see the physical processes at work and to see the people working and earning their living. He comes to realize that subject matter of geography is realistic and contemporary. There are lands which really exist and people who actually live and work.

6. **SYMPATHY AND UNDERSTANDING:** education is assigned with different aims. One of the aims of education is to develop sympathy and understanding among the educands. By direct observation in the home region pupils become aware of the fact in small locality and community people are engaged in different occupations and beset with different problems. Some of the problems have direct relationship with the environment, while as others can be attributed to history, political and economic conditions. The accurate knowledge that he acquires about the inter-relationship of the geographical elements of his immediate environment, helps to understand the struggle of man in other environment-countries, states etc of the world. This type of understanding leads to the development of such qualities of heart as tolerance and sympathy for the people inhabiting other parts of the world.

    Secondly, during his field study in the home region, he knows and learns that even the members of small group or community are interdependent on one another. The more the civilized society, the more the degree of interdependence. Such understanding develops the qualities of a good citizenship.

7. **BELONGINGNESS:** A study and knowledge of local region helps a child to known that he is a part and parcel of the community inhabiting a particular area of the earth’s surface. He belongs to a particular area of the earth’s surface. He belongs to a particular hamlet, village, town or city.
Thus the study of home geography develops the sense of belongingness in the pupil. It also develops the sense of responsibilities in him.

Thus home geography will make the teaching and learning of geography will make the teaching and learning of geography easy, interesting, effective and meaningful. It also develops in the pupil the qualities of a good citizenship.

An objective is a point or end towards action is directed. It is a statement or form of category which suggests any kind of desired change.

**INSTRUCTIONAL OBJECTIVES OF TEACHING GEOGRAPHY**

**OBJECTIVE**: An objective is a statement or form of category which suggests any kind of desired change.

According to NCERT’s Evaluation and examination issue, “An objective is a point or end in view of something towards which action is directed, planned change brought through any activity which we set out to do”. This definition reveals that objective has three characteristics.

i. **Direction**: it provides direction for activity which is designed for achieving the ultimate goal.
ii. **Planned Change**: it helps for desired change.
iii. **Basis for Activity**: it plans the basis for organized activity.

**INSTRUCTIONAL OBJECTIVES**: According to Robert Mager,” An instructional objective may be defined as intent communicated by a statement describing a proposed change in learners”.

Instructional objectives are achieved in terms of change of behavior of learner. They are related to desired learning or teaching outcomes of behavior of learners. They may be termed as teaching learning objectives. An instructional objective indicates those knowledge, skills, abilities and attitudes that the teacher expects the students to acquire as a result of instruction. They are narrow, specific, definite tangible, precise, clear and functional. They are related to classroom teaching. They are the basic targets which could be easily achieved within the limited period or means.

**TAXONOMY OF INSTRUCTIONAL OBJECTIVES**: Taxonomy means classification of an object or an idea. Taxonomy of instructional objectives implies classification of instructional objectives. It means the analysis of instructional objectives in terms of the specific and precise teaching out. Taxonomy of objectives has been worked out on the assumption that the teaching learning processes may be conceived as an attempt to change the behavior of the learner with respect to some learning experiences involved in the subject or the activity.

B.S. Bloom has given the taxonomy of instructional objectives. He has classified the instructional objectives into 3-domains:

a. Cognitive domain.
b. Affective domain and
c. Psychomotor domain
a) **Cognitive domain**: Cognitive domain covers head-mind. It is related to the process of thinking. In cognitive domain only those educational objectives are included which are concerned with knowledge, recognition and recall and cater to the development of intellectual abilities and skills. B.S.Bloom has divided objectives related to Cognitive domain into six categories.

1. Knowledge
2. Comprehension
3. Application
4. Analysis
5. Synthesis and

b) **Affective domain**: Affective domain covers heart. Affective domains concerned with interests, emotions, appreciations, attitudes, values feelings etc of the pupils. The objectives of affective domain are:

1. Receiving
2. Responding
3. Valuing
4. Organizing and
5. Characterization.

b) **Psychomotor Domain**: it is concerned with the training of the student’s physical activities and development of skills. The main levels are:

1. Perception
2. Imitation
3. Manipulation
4. Precision
5. Co-ordination and

Instructional objectives of teaching geography at secondary level are summarized below:

1. **KNOWLEDGE**: It is defined as the remembering of previously learned material. It represents the lowest level of learning outcomes in the cognitive domain.

   In geography knowledge is concerned with the remembering of geographical facts, events, terms, concepts, principles, generalizations, hypothesis, problems, methods, trends, symbols, tools, techniques, processes etc.

   The student in acquisition of knowledge is expected to:

   i. Recall terms, facts, events, concepts, principles, symbols etc
   ii. Recognize terms, principles, concepts, events, symbols etc
   iii. Indicate information on maps, charts, diagrams, graphs etc
   iv. Read information in various forms such as charts, maps, diagrams, graphs, tables etc
2. **COMPREHENSION**: Comprehension is defined as the ability to grasp the meaning of material. It represents the lowest level of understanding. For comprehension knowledge is necessary. Comprehension is one step beyond knowledge.

In comprehension the students are expected to:

i. Translate from one form of communication to another.
ii. Distinguish and differentiate between facts and terms.
iii. Compare and contrast.
iv. Explain different terms, concepts etc.
v. Summarize.
vi. Cite illustrations.
vii. Detect and rectify errors.
viii. Identify relationship between causes and effects.
ix. Interpret data presented in various forms.
x. Identify underlying assumptions.

3. **APPLICATION**: Application is the ability to use the learned material in new and concrete situation. Application is only possible when the student possess knowledge and comprehension. Knowledge and comprehension are the pre-requisites of application. Learning outcomes in this area require higher degree of understanding than those of comprehension.

The student in application step is expected to:

i. Analyze the situation to identify the problem.
ii. Select relevant knowledge to explain a new situation or solve a problem.
iii. Judges adequacy, relevance, essentiality, verifiability etc of data or any other evidences.
iv. Re-organises the material in a new situation.
v. Establishes relationships.
vi. Formulates hypothesis.
vii. Verifies hypothesis.
viii. Draw inferences.
ix. Generalize principles, laws etc.
x. Predict outcomes in a given situation.

4. **SKILLS**: Skill is an instructional objective which finds its place in co native or psychomotor domain. In this domain the students are expected to:

i. Draws maps, sketches, diagrams and geographical structure to present geographical information.
ii. Presents models, tools and apparatus etc.
iii. Handles tools and geographical apparatus.
iv. Makes observation in an accurate manner.

5. **INTEREST**: Interests form a part of affective domain. The students of geography are said to develop interest in geography if they perform activities like:
i. Read literature of the subject geography.
ii. Collect geographical information from various sources, i.e. books, magazines, journals and newspapers.
iii. Desire to know the lands and people of the different of the country as well as the world.
iv. Participate in geographical tours, field trips, excursions, surveys etc.
v. Collect specimens and pictures of geographical interest.
vi. Advances relevant geographical reasons to explain various human activities and natural phenomena.
vii. Visits places of geographical interests.
viii. Pursues hobbies related to the study of geography such as model making, photography, cartography, surveying etc.

6. **ATTITUDES:** The subject matter of geography is man and his environment. Through geography, the students are expected to develop positive attitude towards people and the environment. The students are said to have developed positive attitude when they;
   i. Recognize the contribution of various people of the world living in different parts of the world in the development of modern civilization.
   ii. Recognize the significance of interaction between man and his environment.
   iii. Recognize the interdependence of states, regions and countries of the world.
   iv. Exhibit, sympathy and love for all the people of the world.
   v. Considers national problem in interaction context.
   vi. Realizes the importance of judicious exploitation and conservation of the available natural resources.

The above mentioned adjectives make it clear, what is the purpose of teaching geography at the secondary level. The teacher of geography is expected to realize these behavioral outcomes through the teaching of geography. The instructional objectives give direction to the activities of the teacher.

**METHODS OF TEACHING**

**LECTURE METHOD:**

Lecture method of imparting instructions is teacher dominated. Lecture is the method of communicating directly to the students where the talking by teacher is the most predominant activity.

Lecture can be talking to the students or talking with the students, when it is talking to it takes the form of one way communication in which teacher plays the active role and remains the focus of the class. When it is talking with it takes the form of two way communication. In this kind, lecture becomes a question-answer or discussion activity instead of merely giving information.

Lecture method of imparting instructions has a long history. Its origin can be traced back to Vedas and Upanishads in our country or to the Socratic dialogue in the Greek context. In Vedic period
lecture was given through question–answer method with the student sitting by the side of the Guru. In the medieval period however, a preacher used lecture as one way communication, since, in most of these situations, the group of listeners was large.

Lecture once considered the sole source of information, is now being treated as one of the different sources of information available to the learners. But lecture has edge over other sources of information. Apart from its major function of information giving, it plays certain unique roles, which cannot be performed by other unanimated sources. Firstly, the teacher may use it to motivate the students. It is through listening to lecture, that students are attracted to different areas of study, secondly, the teacher may use it to integrate various sources of information and uses it as a thread which brings the different sources of information into one garland.

**STEPS IN A LECTURE:**

The lecture follows some specific steps through which it can be carried out:

1. Planning and
2. Delivery

1. **Planning of a Lecture:** We should dispense with the idea that a lecture does not require planning. An unplanned lecture hardly achieves the objectives of classroom instruction. The planning of a lecture entails a number of things:
   i. Instructional objectives to be achieved.
   ii. The amount of content to be covered.
   iii. The kinds of audio-visual aids that are to be used.
   iv. The kind of questions to be asked.
   v. The kind of other instructional modes to be used.
   vi. The kind of feedback mechanism to be used etc.

Thus, planning a lecture boosts confidence of teacher in handling the class. He knows in advance what to do, when to do and what not to do. Sometimes, the teacher can plan for humorous interludes, jokes etc to make the lecture more interesting.

2. **Delivery of a Lecture:** delivery of a lecture is done in three phases:

   a. Introduction of a lecture
   b. Development phase and
   c. Consolidation phase

   a) **Introduction of a Lecture:** Introduction is also called the warm up phase. The main task of the teacher here is to establish rapport with the students, create interest and motivation amongst them and gradually lead the learners to next phase. At this stage the teacher
related the new topic to the one already taught and to the previous experiences. The main function here is to arose interest and motivate the students. The teacher also uses the board or any other visual medium to highlight the theme.

b) Development Phase: This is the most important phase of a lecture because the transaction of ideas and information between the teacher and the learner takes place here. The teacher explains the concepts and principles, provides facts, data, figures etc, to the learners. In order to explain the context matter, the teacher cites various examples, uses various communication aids, uses analogies and illustrations etc. The teacher, when required, adopts different non-verbal communication techniques such as gestures, postures, etc to facilitate the teaching activity. During this phase, the teacher should be cautious of his lecture, otherwise, it becomes ineffective.

c) Consolidation Phase: this is the concluding phase of the lecture. Here the teacher recollects whatever he has covered during the course of the lecture. He then summarizes the main teaching points of the lecture either verbally or by writing them on the black board or by using OHP (Over Head Projector). The teacher also asks a few questions on the content matter, in order to evaluate the students understanding the lecture. Through these questions, the teacher gets to know the learning difficulties of students and accordingly modifies the teaching. The teacher also gives some home task to the students.

**MERITS OF LECTURE METHOD:**

1. Lecture method is economic method of teaching.
2. It is very useful for teaching large classes.
3. Through Lecture method, the syllabus can be covered quickly.
4. It is very useful for motivating the students and integrating the different sources of information.
5. It saves time as well as energy of the students.
6. Lecture method trains the students in skills like learning, taking notes etc.
7. It is used to achieve the high order cognitive objectives.
8. It lays stress on clarification and for laying stress on significant ideas.

**DEMERITS OF LECTURE METHOD:**

1. This method is teacher dominated method of imparting instructions to the learners
2. This method doesn’t take into consideration individual differences. The teacher expects below average, average and above average students to learn at the same place, which is not possible.
3. This method is not useful for obtaining psychomotor objectives.
4. In this method the students are passive listeners and not active participants. It is unpsycological
5. Lecture strategy spoon feeds the learners and there is no room for self study.
6. Lecture strategy cannot be used effectively by all types of teachers.
7. It is not considered the natural method for the students to learn. There is a little scope for student activity.
8. This method is considered dull and boring, when used continuously. The attention of the students is not maintained.
9. This strategy cannot be used in lower classes.

DEMONSTRATION METHOD

Demonstration device is teacher controlled device of teaching. The teacher takes the help of demonstration method when he wants to develop skills in his students. A geography teacher can demonstrate number of geographical phenomena in the class, like formation of days and nights, change of seasons, differential heating of land and water, drawing of maps, precipitation, evaporation, condensation, measurement of temperature of air, measurement of atmospheric pressure, uses of globe etc.

Webster dictionary defines demonstration as,” a public showing emphasizing the salient merits, utility, and efficiency of an article or a product.

While using in teaching, demonstration means how something is to be done or not to be done. It involves the art of depicting the skills associated with an action.

MAJOR CHARACTERISTIC OF DEMONSTRATION

i. Both concrete and abstract matter can be demonstrated effectively.
ii. Demonstration is thought to be the best method of displaying skills in operation. Drawing of maps, using of black board can be demonstrated.
iii. Apart from demonstrator, demonstrator is facilitated by audio-visual materials, like the chalkboard, a film strip, a film, a diagram, a chart etc.

PRINCIPLES OF DEMONSTRATION

1. Establishing Rapport: The demonstrator should always maintain friendly relationship with the students. He should be simple and warm human being. He should stimulate curiosity and interest among the students.
2. Avoiding COIK Fallacy: the demonstrator must be able to put himself in the role of an observer. Hence he requires thoughtful and vigilant efforts. He must avoid COIK Fallacy (clear only if known), which shows that the demonstrator knows his subject well and students are ignorant of that.
3. Watching for Key points: the demonstrator must ensure that the key points in the demonstration are being communicated to the students. Hence he must lay special; stress on them, repeat them and highlight them.

In demonstration there is mainly three steps i.e.

a) Preparation
b) Presentation and
c) Evaluation
a) **Preparation**: while making preparation for a classroom demonstration, the demonstrator has to take the note of following points.

   i. The demonstrator must prepare demonstration in such a way will create interest among students and will make them active and responsive.

   ii. The demonstrator must prepare every step of his demonstration carefully. He must ensure that the requirements of every step in the demonstration are ready and kept in order. He has to make every piece of requirement beforehand. It is undesirable to interrupt and go for some equipment when the demonstration is already on.

   iii. The demonstrator should rehearse the demonstration in order to test for its clarity, interest, duration and other elements with a good critic.

   iv. In order to make the demonstration understandable, the demonstrator should outline the steps on the chalk board before the class begins. The teacher may remove the steps one by one when a particular step is completed.

   v. He must make sure that everyone present in the demonstration can see and hear the teacher. Hence, he should ensure proper lighting and seating arrangement exists in the class.

**PERFORMING CLASSROOM DEMONSTRATION**

When the preparation for demonstration is over, the teacher starts the classroom demonstration. The key points here are:

1. The demonstrator should arouse curiosity and create interest among the students and hold their attention as he goes through the different stages of demonstration. He may allow them to ask questions about the purpose of demonstration.

2. The demonstrator should try to keep the demonstration simple. He should take the care of the less capable students and stress much on the main points of the demonstration. He should not overload the students with the ideas which he knows.

3. The demonstrator should not go out of track during demonstration. If you go of track, it will create frustration among the students.

4. He should always watch his audience and detect signs of confusion, boredom and disagreement. He should not have the impression that everything is clear because no student looks puzzled and ask a question. He should put questions to the students in order to make sure that his ideas are getting across the students.

5. The demonstrator should not proceed fast while demonstrating. He should keep in his mind that the students are seeing the demonstration for the first time. He may stop for a while and asks questions to the students.

6. The requirements of demonstration should be kept in its proper place. Sometimes the demonstrator forgets this and moves around the table to grasp something that has been placed with his reach. This shows his unskilful presentation which mars the student’s interest.

7. The demonstrator must facilitate the observation by the students. It is for the students to observe properly and keenly. Hence the objects or processes being demonstrated should be
clearly visible to the students. It should observe and described by the students. This would encourage the students to pay more attention to the demonstration and observe the demonstration on their own.

8. A demonstrator keeps on summarizing as the demonstration progresses. He uses charts, chalk board, diagram or some other device for summarizing purposes in the lengthy demonstration.

EVALUATION OF CLASSROOM DEMONSTRATION:

Evaluation of classroom demonstration generally involves two things

1. Students Evaluation and
2. Demonstrators Self Evaluation

STUDENTS EVALUATION:

The demonstrator evaluates the students learning after the demonstration is over. He can assess the students learning through written tests or discussions and ensure that objectives of demonstration have been accomplished.

DEMONSTRATORS SELF-EVALUATION:

The demonstrator may evaluate himself by asking the following self-evaluative questions to himself.

i. Was the demonstratorian adequate and skillfully prepared?
ii. Have I followed the step by step plan?
iii. Have I made the use of additional materials appropriate to my purpose- chalk board, diagrams, charts and the like?
iv. Was my demonstration correct?
v. Was my explanation simple enough so that most of the students understood it easily?
vi. Could every person see and hear?
vii. Have I encouraged students to ask questions?
viii. Have I helped them to do their own generalization?
ix. Have I summarized the key points?
x. Was my demonstration really achieved the purpose?

OBSERVATION METHOD

Geography is the study of man and his environment. Its subject matter is concrete and real. It can be seen and studied anywhere and at any time if we choose it.

Geography has a peculiar methodology. This helps in carrying out the investigations efficiently. The principal aspects of geographical methods are:
i. To observe
ii. To record and
iii. To interpret.

The technique of obtaining geographical information by direct observation is basic to the subject. By observation a learner is brought in close contact with the geographical facts. We must bear in mind that the books written on geography are based on the direct observation of the people who have visited various countries or regions.

Learning and other intellectual experiences are accomplished through sense organs i.e. ear, nose, tongue and skin. The learning experiences are of three types:

i. Direct or Firsthand Experience.
ii. Representative, Reproductive or Contrived Experience and
iii. Symbolic Experiences.

All the three types of learning are necessary for obtaining right type of knowledge but direct or firsthand experience is the most educative type of experience. Here the learning is more or less permanent. If we teach geography without observation, our methodology will be unscientific and unpsychological.

There are certain geographical facts, terms, concepts and processes, which needs direct observation and without which it is not possible for the learners to understand these terms, facts and processes. Direct observation aid where the teachers words fail.

The observation method of teaching consists of three major types of activities:

i. Direct observation within the school campus.
ii. Field trips and
iii. Observation of secondhand materials.

**DIRECT OBSERVATION WITHIN THE SCHOOL CAMPUS:**

Most of the observations can be carried out within the school campus during the period meant for geography teaching. They are:

i. Surveying and map making.
ii. Study of elements of weather i.e. temperature, pressure, wind, rainfall sunshine, clouds, humidity etc.
iii. Study of time and seasons by fixing a vertical pole at some convenient place and observing its shadow.
iv. Soil erosion, sheet erosion, underground water etc.
v. Evaporation, condensation and precipitation.
vi. Slanting rays and vertical reason of sun etc.
After observing, these facts need to be recorded and interpreted.

**FIELD TRIPS:**

Direct observation of geographical facts outside the school campus needs to organize field trips and survey campus. They can help a learner to understand the geographical facts as they exist.

A trip to river side may explain the terms like source of river, course of river, stages of river, erosion, transportation, deposition, meanders, waterfall, rapids, cascades, tributary, distributary, confluence etc.

A trip to mountainous side may explain us the terms like mountain, hill, summit, peak, glacier, valley, gorge, etc.

The geographical facts that can be learning while paying a visit towards sea side are waves, currents, tides, peninsular, beach, island, cape etc.

A trip to desert side may explain the terms like sand dunes loess, mushroom rock, desert vegetation etc.

The other places of visit, to which trips can be organized are zoo, museum, urban centers, railway yards, rural areas, market places etc. these will help the learner to acquire the knowledge of human geography. To accomplish the knowledge regarding land use pattern and population studies the teacher has to organize survey camps. The data collected during the field trips and survey camps be represented by statistical diagrams and maps. The purpose of these activities is to lead to clarification of basic geographic concepts and effective learning.

**OBSERVATION OF SECOND HAND MATERIAL:**

It is not possible to have the first hand experience or direct observation of all geographical facts, processes and phenomena. Where the direct observation is not possible, it is the duty of teacher to display teaching aids in the class. The teaching aids must be relevant to the topic. The various teaching aids which can be used in the teaching and learning are globes, maps, charts, models, diagrams, films, slides, samples, specimen, etc. the teaching aids make the teaching-learning process easy, interest, effective and purposeful.

**MERITS OF OBSERVATION METHOD**

1. Learning achieved by observation method is of higher quality.
2. By observing geographical facts children gain experience. According to Jhon Deway, “an ounce of experience is better than ton of theory”.
3. Direct observation of geographical facts breaks the dullness and drabness of the classroom. It makes the learning an enjoyable experience.
4. If geography teaching is confined to the four walls of classroom, the children get a notion that the subject matter of geography is something which finds place only in books. Direct observations of geographical facts make them feel that its subject matter is concrete and realistic.
5. Direct observation of geographical facts leaves the permanent impression on the plastic minds of children.
6. The organization of trips and tours develops in the students the social qualities like cooperation, unity, tolerance, forebearance, sympathy, brotherhood etc.
7. Observation method of teaching geography gives freedom to the students. This method is democratic in its approach.
8. In this method, students are not passive listeners, but active participants in the act of learning.
9. It is an easy, interesting method of obtaining knowledge.
10. The pupils are always curious to see and observe the outside world. This method satisfies their curiosity.
11. It is psychological and scientific method of instructions to the pupils.

DEMERITS OF OBSERVATION METHOD:

1. If this method is conducted aimlessly and for the purpose of entertainment only, it will degenerate it aimless wondering.
2. This will upset the timetable and will affect the teaching of other subjects.
3. This method is not suitable for small children because they have not developed the power of observation.
4. It is time consuming and entails great cost, which any Indian is not in a position to afford.
5. It needs trained teachers, which our schools don’t have.
6. It is not possible to have the direct observation of all geographical facts, because geographical personalities of areas vary.

Inspite of all these drawbacks, observation method is the best method of obtaining geographical knowledge and it is obligatory on the part of students to arrange excursions, tours and field trips and provide a chance to study the geographical facts as they exist. This method is psychological and scientific.

LESSON PLANNING

A lesson plan is a plan of action. It includes the working philosophy of teacher, his knowledge of philosophy, his information about and understanding of his pupils, his comprehension of the objectives of education, his knowledge about the materials to be taught and his ability to utilize the effective methods or procedures.

Lesson planning is a brief outline of the main points of the lesson to be covered by the teacher in a specified period for the realization of specified objectives. It indicates clearly what already has been done, what the pupils are to do, how the pupils are to be engaged in various activities and what
activities are to be pursued. It is a clear and precise statement of aims and purposes of the lesson and the various techniques and devices used by the teacher.

Daily lesson planning involves defining the objectives, selecting and arranging subject matter and determining the methods or procedure.

In lesson planning a teacher has to consider the following points:

i. Broader objectives of the subject.

ii. Instructional objectives of the lesson.

iii. Organization of subject matter to be covered in the lesson for achieving the stipulated objectives.

iv. The decision about the way of presenting the subject matter, teaching strategies and tactics, classroom interaction and management.

v. Appropriate provision for evaluation and feedback.

**PRINCIPLES OF LESSON PLANNING**

1. **Principle of Writing the Lesson Plan**: A good lesson plan should be preferably written. It should not remain at the oral or mental stage.

2. **Principle of Statement of Objectives**: A lesson plan must contain both general and specific objectives. These objectives should be clearly stated.

3. **Principle of Selection of Suitable Subject Matter**: The content of the lesson—plan should be selected according to needs, interests, abilities and level of the pupils.

4. **Principle of Orderly Presentation**: The subject matter should be presented in an orderly, organized and effective manner. Effective presentation includes:
   a) **Principles of Co-Relation**: The subject matter which the teacher presents should be co-related with what has been done before and what is to follow. Moreover, it should be co-related with various other subjects. It will make the lesson interesting and meaningful.
   b) **Principle of Teaching Techniques**: The plan should indicate the teaching techniques to be used by the teacher—how lesson is to be presented, what method is to be followed, what questions are to be asked and what illustrations are to be used. It should clearly indicate the teaching-learning aids to be used by the teacher.
   c) **Principle of Use of Chalk-Board**: Lesson plan should clearly indicate chalkboard work done by the teacher. It should point out the diagrams and sketches which are to be drawn on the chalk board.
   d) **Principle of Child’s Activity and Participation**: Lesson plan should point out child’s activities and participation which is to be made in the classroom. Pupils should be encouraged to ask questions, solve problems and perform experiments.

5. **Principle of Flexibility**: Lesson plan should be free to depart from the lesson which he has already planned.
6. **Principle of Evaluation:** Lesson plan should indicate evaluation activities. The evaluation exercise must consist of short answer and objective type questions.

7. **Principle of Assignment:** Lesson plan should include assignments for pupils.

8. **Principle of Bibliography:** Lesson plan should indicate selected bibliography i.e. reference books.

9. **Principle of Duration:** The lesson plan should indicate the time within which the lesson is to be delivered. It must be balanced.

10. **Principle of Age:** The lesson plan should point out the target group i.e. age of pupils. The lesson is to be planned for a particular stage development and mental level of the pupils. It must also indicate the class, subject and topic as well.

11. **Principle of Making Summary:** The lesson plan should have outline or summary of the whole lesson. The summary may be developed on the chalk-board with the help of the students.

**PRE-REQUISITES OF LESSON PLAN**

1. **Knowledge of Subject Matter:** The teacher must be master of his subject. He must have the rough knowledge of subject matter, materials and activities where are to be used.

2. **Knowledge of Child Psychology:** The psychological insight of the teacher is necessary. The teacher must have the knowledge of child psychology i.e. he should know the standard and individuality of his students and present the subject matter accordingly.

3. **Knowledge of Methods and Techniques:** The teacher should be conversant with the methods and techniques of teaching.

4. **Knowledge of Objectives:** The teacher must have basic knowledge of aims and objectives of education. He should have the ability to state objectives in behavioral terms. He should be also well conversant with various teaching skills.

**IMPORTANCE OF LESSON PLANNING**

1. Lesson planning helps a teacher to define his aims and objectives more clearly. The teacher thinks of ways and means with which he can realize his aims most effectively.

2. It helps a teacher in the selection and organization of subject matter, materials and activities, according to the abilities, aptitudes and development level of students.

3. Lesson plan helps a teacher in the selection of most effective teaching procedure, which will lead to the modification of pupils’ attitudes, habits and information in desirable direction.

4. Lesson planning helps a teacher to evaluate the outcomes of instructions. Evaluation is very important part of teaching-learning process. Evaluation is possible if definite aims and objectives are kept in mind.

5. Lesson planning helps a teacher to be systematic and prevents wastage. It saves him from haphazard teaching. Needless repetitions are avoided.

6. Lesson planning establishes proper connection between the different lesson or the units of study. Thus it encourages continuity in the teaching process.
7. Lesson plan provides adequate lesson summaries and ensures a definite assignment for class which helps in developing insight and understanding.
8. Lesson planning imparts confidence and self-reliance to the teacher. It enables the teacher to enter the classroom without anxiety. He foresees the difficulties that are likely to arise and make himself prepared to deal.

**STEPS OF GEOGRAPHY LESSON**

1. **MARGINAL INFORMATION:** Marginal information includes the following:
   i. Date
   ii. Class
   iii. Subject
   iv. Topic
   v. Time and
   vi. Average age

2. **OBJECTIVES:** The objectives are generally classified into two categories:
   a. General objectives and
   b. Specific objectives

   **GENERAL OBJECTIVES:** These are related to the subject. The general objectives of teaching geography are:
   i. To study earth as the home of man.
   ii. To study the areal differentiation of the earth’s surface.
   iii. To study interaction between man and his environment.
   iv. To study genuine local patriotism.
   v. To develop broad mindedness, sense of human brotherhood and international understanding.
   vi. To develop power of reasoning.

   **SPECIFIC OBJECTIVES:** specific objectives are also known as instructional objectives. These are related to the day’s topic. These objectives are written as;
   i. To help the students to know about.
   ii. To acquaint the students with.
   iii. To familiarize the students with.

**TEACHING AIDS**

A number of teaching aids are available with the teacher in the classroom i.e. chalkboard, chalk, duster, pointer etc. there is no need of making a record of these aids in the plan. For teaching aids we can make a record of the aids needed for a particular topic on a particular day. For teaching aids in geography lesson one can make a mention of globes, maps, diagrams, statistical diagrams, charts, models, specimens, samples etc. geography teaching demands wide and regular use of teaching aids. These aids make teaching-learning process easy, interesting and effective. These supplement and
reinforce verbal experiences, these must be relevant to the topic and displayed at an appropriate time. When their use is over, they must be removed.

**INTRODUCTION**

The introduction/motivation/preparation is also known warm-up phase. It can be performed by tapping the previous knowledge of the students by asking suitable questions, related to the lesson in hand. The desirable number of questions is 3 to 5.

Sometimes the topic is new one, a display of a teaching aid i.e. maps, and globe, chart, diagram, model etc. form a very good introduction. The children are asked questions related to the teaching aids which they are made to observe close and gradually lead them to the day’s topic.

Lesson can be introduced even by telling a story. The story must be relevant to the topic and must make a base for the day’s lesson.

Lesson can even be introduced by telling a joke. The purpose of this step is to develop curiosity among the pupils for the day’s lesson. After students are motivated the topic is declared.

**PRESENTATION**

The presentation means the learning materials to be presented by the teacher for the particular day. The learning material needs to be organized in a logical order. The whole subject matter to be presented is sub-divided into sub-sections each one leading logically to the next. In the presentation stage a teacher has to make use of various principle of presentation.

i. Principle of selection and division.
ii. Principle of successive clearance.
iii. Principle of alternate absorption and reflection and

A teacher has to make use of maxims of teaching i.e. to proceed from known to unknown, simple to complex, easy to difficult, immediate to remote, factual to conceptual etc. he has to make use of analogies and illustrations. To explain the concepts and to reinforce verbal experience, the teacher makes use of teaching aids. He applies communication boosters (body language) i.e. gestures and postures. At this stage a teacher has to be very careful, otherwise, his lesson will not prove effective. This step should take most of the time.

In the presentation process of the lesson, it is the teacher’s exposition, professional competence, class management, involvement of the students and his personality which is subjected to an acidic test. A competent teacher has full control of his class and can deliver things in a free and fair manner, during presentation process.
EVALUATION

Evaluation is defined as the estimation of growth and progress of the students towards accepted objectives and values. Evaluation process involves, testing the comprehension of the subject matter by the pupils.

After the lesson is summarized, a series of questions are asked from the students and answers elicited from them. In evaluating topic only short answer type and objective type questions are posed to the students with in a brief period of time. The objective type questions include completion type, matching type, multiple choice type and alternate response type. They may be also assigned home task.

Evaluation helps a teacher to know, how far teaching-learning process remained effective.

PROJECT METHOD

John Dewey was an American Philosopher, psychologist and a practical teacher. He was pragmatist. The project method is the direct outcome of his philosophy.

Project method is a self learning method. In this method student plays a major role. It is student dominated method.

The dictionary meaning of the word project is a scheme or a design. Several authors have defined the concept of project. But one of the most comprehensive definition was given by Good (1973). According to Good, “Project is a significant practical unit of activity having educational value and aimed at one or more definite goals of understanding, involving investigation and solution of problems and frequently the use and manipulation of physical materials, planned and carried to completion by pupils and teachers in natural, real life manner”.

The project provides real life experience to the pupils. It helps them to plan, to observe and to conceptualize. It entails the involvement of the both the teachers and the students. It tends to develop self learning habits in the learners. The learners learn to solve certain kinds of problems systematically.

CLASSIFICATION OF PROJECTS

The projects are broadly classified as;

1. Individual Projects and

2. Social Projects

1. INDIVIDUAL PROJECTS are carried out by one individual.

2. SOCIAL PROJECTS are carried out by a group of individuals.
AIM OF PROJECTS

The aims of projects can be broadly divided into the following categories:

1) Knowledge
2) Skills and
3) Personality attributes.

1) **KNOWLEDGE:** Working on a project enables a learner to develop knowledge of his topic, and various techniques used in the area of study. He knows about the methodology used in the discipline. The learner understands the difficulties in solving the problems. These problems may be related to time, material, labor, cost etc.

2) **SKILLS:** the project develops the following skills in learners:
   i. Skill for independent work.
   ii. Skill for group work.
   iii. Skill for communication.

   **Skill for independent work:** The skill for independent work are independent thinking, working habits, initiative and resourcefulness, plan work, analyze factors in solving a problem, hunt for sources, collection of data, select relevant materials, fabricate experiments, manipulate instruments, make keen observation, analyze results, synthesize findings, generalization, present his findings and communicate them properly.

   **Skill for group work:** Very often project work is done in groups, while working in a group the people develop the ability to co-operate and manage the people. Good projects provide the opportunity to develop fellows' feelings and democratic outlook.

   **Skill for communication:** Project work develops in learners communication skills through variety of activities. It develops oral skills by argument and discussion with colleagues and supervisors.

3) **PERSONALITY ATTRIBUTES:** Project work also inculcates various personality attributes in learners. The personality attributes include higher mental abilities like critical thinking, creative thinking, evaluating ability, analytical thinking etc. the project work thus help in cognitive development in the learners.
STEPS INVOLVED IN PROJECT WORK

The various steps involved in a project are:

1) Selection of problem
2) Formation of design
3) Collection of appropriate data
4) Analysis of data
5) Drawing conclusions
6) Critical evaluation
7) Project writing/presentation.

1) **SELECTION OF PROBLEM**: The project work is generally carried out under the guidance of supervisor. But in the entire process, it is the student who should be given major responsibility. The students should be given an opportunity to choose the topic for a project work on their own. The teacher must only provide guidance. They may select a topic from the list which is sometimes prepared by the faculty.

2) **FORMATION OF DESIGN**: The students must be encouraged to form a design or to prepare able print or synopsis for the project. In the process of planning, teacher has to act only as guide and is required to give suggestions, but the actual planning is left to the students.

3) **COLLECTION OF APPROPRIATE DATA**: The project requires collection of appropriate data. The data can be collected through experimentation, field work or appropriate data or library work etc.

4) **ANALYSIS OF DATA**: Analysis of data refers to the ability to break down materials into component parts, so that its organizational structure may be understood.

5) **DRAWING CONCLUSIONS**: After analyzing the data, the next step is to conclude the project or bring to an end.

6) **CRITICAL EVALUATION**: Evaluation is concerned with the ability to judge the value of materials for a given purpose. The judgment is to be based on particular criteria. The students should be encouraged by the teacher to see themselves their attainments. They should be able to find their own mistakes. They should be made to evaluate and criticize their findings and improve accordingly.

7) **PROJECT WRITING OR PRESENTATION**: After critical evaluation a complete record of the project is kept by the student. The record should include everything about the project.

**ROLE OF TEACHER:**

The role of a teacher is that of guide, philosopher and friend. He should solve the students in solving the problems; encourage them to work collectively and amicably. He should also help his students to avoid mistakes. He should maintain democratic atmosphere.
DEMERITS OF PROJECT METHOD:

1) Project requires lot of time.
2) It does not provide sufficient knowledge to the students.
3) It is expensive method, because it requires tours, excursions, purchasing of equipments and instruments.
4) The project work has the tendency to upset the regular time table.
5) This method is not suitable for handicapped children.
6) This method does not ensure completion of the syllabus.
7) Project method is not the only method of acquiring knowledge but one of the methods.

DISCUSSION METHOD:

An old proverb says, “two heads are better than one, but when a number of heads combine to solve a problem wonderful results can be achieved”. This method is inconformity with discussion method of learning.

Discussion method of instructional strategy is a co-operative method in which the teachers and the learners are active participants. It is also a democratic method because the participants are free to express their views and opinions.

Discussion method has been used in the teaching learning process since times immemorial. It was widely used in the famous Nalanda University. The Greek scholars also used this method to discuss various problems and issues with their disciplines. This method forms an important method of imparting knowledge and information and clarifying doubts even during the modern times. In fact, its importance is increasing day by day.

Webster dictionary, defines discussion in the following manner, “to discuss means to consider to examine, to investigate the various sides of a problem or a topic. This method ranges all the way from simple question-answer technique to non-directive approach where the teacher is playing the laissez-faire role. This technique is essential part of democratic process”.

In the discussion there is exchange of opinions accompanied by search for factual basis. The participants are involved in competitive co-operation. It is the process of collective decision making. It aims at uniting and integrating the work of the class. Discussion encourages the students to use their experiences for further clarification and consolidation of learning materials. They are active participants in discussion. Teachers job is t provide guidance to the students activities. A good discussion is well planned and well mannered conversion and as such participants must be courteous, clear, good natured, tolerant and sincere.
Discussion involves study and preparation, selection and organization of subject matter, exchange of ideas and learning procedures. It involves valuable training to the students in reflective thinking.

Discussion may be formal or informal. In formal discussion proper schedule is prepared and certain rules are observed. The informal discussion takes place informally, where discussion does not take place informally, where discussions do not demand any schedule or observance of rules.

Group discussion may be organized only problem or graphical issue.

**PRINCIPLES OF DISCUSSION**

Discussion method is based on the following principles:

1) Principle of active participation.
2) Principle of freedom for work.
3) Principle of group and equal opportunities to ask questions and answer them.

**CONSTITUENTS OF DISCUSSION**

The constituents of discussion are:

1) Leader.
2) Group.
3) Problem.
4) Content.
5) Evaluation.

1) LEADER: In the discussion teacher is the leader. He does planning of discussion, selection and organization of subject matter. As a leader, his work is to lead and guide the discussion and as well as to see that all the members of the group participate in the discussion.

2) THE GROUP: The students of the class form the group. The students or the members of the group differ in their intelligence, temperament and interests. Each and every member of the group may be encouraged by the leader to participate in the discussion.

3) THE PROBLEM: The problem or the topic of discussion should be selected co-operatively by the teacher and the students. The problem must be definite and precise. It must be full of educative possibilities. It must be touching to the lives of the pupils.

4) THE CONTENT: The content is the body of knowledge the facts and generalizations which must be drawn upon if any problem is to be discussed and resolved. In discussion we have to constantly resort to facts and generalizations. The differences of opinion are to be discussed and differences are to be resolved, so that agreement is to be reached.
5) **EVALUATION**: At the end of the discussion every participant should evaluate, whether the discussion on a particular problem or topic has added to their knowledge and information, change his ideas, attitudes, prejudice and increased his range of interest. A good discussion should bring changes in his ideas and attitudes and make participants more active than before.

**ADVANTAGES**

1) Discussion helps to improve verbal-self expression. It provides opportunity to every participant to express his views on the topic of discussion.
2) Discussion is a process of collective decision making.
3) The discussion method helps in developing higher mental abilities like critical or logical way of thinking.
4) Discussion discourages role memory and cramming. It provides right approach for acquiring knowledge and information of the problem or topic.
5) Discussion develops right attitude, courtesy, clarity, patience, tolerance and sincerity among the participants.
6) It develops social qualities like co-operation, unity, we feeling among the participants.
7) It is a democratic method of acquiring information and knowledge.
8) In the discussion students are active participant and not passive learners.
9) The learning is of higher quality.
10) It develops problem solving attitude and creativity.
11) Discussion is useful both for seniors and juniors.
12) It develops the power of reasoning and thinking.
13) Group discussion helps in discovering and identifying talented students who have potential to become good leaders.

**LIMITATIONS**

1) Discussion strategy is not useful for all topics, problems and units of study.
2) It has greater chances for deviation from the main topic. It is likely to go off the track.
3) In discussion there is possibility for monopolization. Only a few students dominate and monopolize the situation. A large number of participants do not participate in the discussion.
4) Too much of criticism may lead to unpleasant feelings. It may create emotional tension.
5) This method is not suitable for secondary classes but only suitable for higher classes.
6) If the discussion is conducted without proper schedule and observance of rules, it will degenerate into aimless talking.
7) It is time consuming and does not provide first hand and direct experience to the educands.
EVALUATION

OBJECTIVES OF EVALUATION IN GEOGRAPHY

Education is mainly concerned with developing and modifying the patterns of behavior in human beings in the realms of thinking, feeling and acting. The three pillars of education are objectives, curriculum formulated and methods selected; it is prerogative to evaluate the outcomes.

Evaluation though a new concept, has been with us always and that everybody in his own way is an evaluator.

Webster dictionary defines ‘evaluation’ as a means to determine worth of, to appraise. There is no widely agreed definition of word evaluation. Some educators equate evaluation with measurement (measurement is process of collecting data called measures/ scores/ marks. It collects only data and attaches no importance to it). Others define evaluation as the assessment to which the specific abilities have been achieved. For others evaluation is synonymous with professional judgment. Some view evaluation as primarily scientific inquiry, while as others argue that it is a political activity. There are others who define evaluation as the act of collecting and providing information more intelligently. None of these definitions is fully satisfactory.

Evaluation is complex. It is not the matter of stating behavioral objectives, buildings tests or analyzing data though it may include these activities. A thorough evaluation consists of dozens or more activities. A thorough evaluation consists of dozens or more activities, the precise condition influenced by time, money, expertise, the good will of school practitioners and many other factors. But equally is the image of evaluators holds of evaluation work. Its responsibilities, duties, uniqueness and similarities to related endeavors.

PURPOSE OF EVALUATION

Evaluation serves number of purpose. The important purposes are:

1) To provide basis for decision making.
2) To provide basis for policy formation.
3) To assess student achievement.
4) To evaluate curricula.
5) To accredit schools.
6) To monitor expenditure of public funds.
7) To improve education materials and programmes.
OBJECTIVE OF EVALUATION

Educational evaluation relates to any procedure that appraises the extent to which the specified objectives have been achieved. Therefore, the objectives of education are related with the instructions as well as evaluation. In this way evaluation is comprehensive and objective based.

The main objectives of evaluation in geography for the secondary stage are:

1) Knowledge
2) Comprehension
3) Application
4) Skills.

1) **KNOWLEDGE**: It is defined as the remembering of previously learned material. It represents the lowest level of learning outcomes in the cognitive domain. In geography knowledge is concerned with the remembering of geographical facts, events, terms, concepts, principles, generalizations, hypothesis, problems, methods, trends, symbols, tools, techniques, processes etc.

The student in acquisition of knowledge is expected to:

i. Recall terms, facts, events, concepts, principles, symbols etc
ii. Recognize terms, principles, concepts, events, symbols etc
iii. Indicate information on maps, charts, diagrams, graphs etc
iv. Read information in various forms such as charts, maps, diagrams, graphs, tables etc

2) **COMPREHENSION**: Comprehension is defined as the ability to grasp the meaning of material. It represents the lowest level of understanding. For comprehension knowledge is necessary. Comprehension is one step beyond knowledge.

In compression the students are expected to:

i. Translate from one form of communication to another.
ii. Distinguish and differentiate between facts and terms.
iii. Compare and contrast.
iv. Explain different terms, concepts etc.
v. Summarize.
vi. Cite illustrations.
vii. Detect and rectify errors.
viii. Identify relationship between causes and effects.
ix. Interpret data presented in various forms.
x. Identify underlying assumptions.

**APPLICATION**: Application is the ability to use the learned material in new and concrete situation. Application is only possible when the student possess knowledge and comprehension. Knowledge and
comprehension are the pre-requisites of application. Learning outcomes in this area require higher
degree of understanding than those of comprehension.

The student in application step is expected to:

i. Analyze the situation to identify the problem.
ii. Select relevant knowledge to explain a new situation or solve a problem.
iii. Judges adequacy, relevance, essentiality, verifiability etc of data or any other evidences.
iv. Re-organizes the material in a new situation.
v. Establishes relationships.
vi. Formulates hypothesis.
vii. Verifies hypothesis.
viii. Draw inferences.
ix. Generalize principles, laws etc.
x. Predict outcomes in a given situation.

SKILLS: Skill is an instructional objective which finds its place in co native or psychomotor domain. In this domain the students are expected to:

i. Draws maps, sketches, diagrams and geographical structure to present geographical information.
ii. Presents models, tools and apparatus etc.
iii. Handles tools and geographical apparatus.
iv. Makes observation in an accurate manner.

DESIGN OF QUESTION PAPER (BLUE PRINT)

Design is the basic layout or pattern of the question paper. Design is based on the following policy decisions:

1. Weightage to the instructional objectives.
2. Weightage to the form of questions.
3. Weightage to the content units/subunits.
4. Weightage to the difficulty level questions.

1. WEIGHTAGE TO THE INSTRUCTIONAL OBJECTIVES:

While designing the question paper, a paper setter has to consider the weightage to be given to the instructional objectives. The instructional objectives are knowledge, comprehension, application and
skills in which student’s level of achievement can be tested by a test. The weightage given to the various objectives as per the policy decision is as under:

Class:- 10\textsuperscript{th}

Marks:-40 subject:- Geography

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Knowledge</th>
<th>Comprehension</th>
<th>Application</th>
<th>Skills</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>%of marks</td>
<td>30</td>
<td>40</td>
<td>20</td>
<td>10</td>
<td>100%</td>
</tr>
<tr>
<td>Total Marks</td>
<td>12</td>
<td>16</td>
<td>08</td>
<td>04</td>
<td>40</td>
</tr>
</tbody>
</table>

2. WEIGHTAGE GIVEN TO THE FORM OF QUESTIONS:

The questions paper must contain all the types of questions i.e. essay type, short answer type, supply type and selection type like multiple choice type, true false type and matching type. Due weightage should be awarded to the different forms of questions.

Subject:- Geography

Class:-10\textsuperscript{th}

Max. Marks:-40

<table>
<thead>
<tr>
<th>Form of question</th>
<th>essay type</th>
<th>short type</th>
<th>supply type</th>
<th>selection type</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>%age of marks</td>
<td>37.5%</td>
<td>45%</td>
<td>7.5%</td>
<td>10%</td>
<td>100%</td>
</tr>
<tr>
<td>No. of questions</td>
<td>3</td>
<td>06</td>
<td>03</td>
<td>04</td>
<td>16</td>
</tr>
<tr>
<td>Marks Allotted</td>
<td>15</td>
<td>18</td>
<td>03</td>
<td>04</td>
<td>40</td>
</tr>
</tbody>
</table>

3. WEIGHTAGE TO THE CONTENT:

While designing a question paper due weightage should be given to the content according to its need and importance. For example the Central Board of School Education has prescribed the following weightage to the content portion at 10\textsuperscript{th} class level or secondary level

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Unit</th>
<th>Unit-I</th>
<th>Unit-II</th>
<th>Unit-III</th>
<th>Unit-IV</th>
<th>Unit-V</th>
<th>5-Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marks</td>
<td>10</td>
<td>05</td>
<td>10</td>
<td>05</td>
<td>10</td>
<td></td>
<td>40</td>
</tr>
</tbody>
</table>
4. WEIGHTAGE TO THE DIFFICULTY LEVEL:

While framing the question paper easy, average and difficult questions should be framed in proportion. The proportion of questions should be easy=20%, average=50% and difficult=30%.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Level of Difficulty</th>
<th>% of Questions</th>
<th>% of Marks</th>
<th>Marks Allotted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Easy</td>
<td>20%</td>
<td>20%</td>
<td>8</td>
</tr>
<tr>
<td>2</td>
<td>Average</td>
<td>50%</td>
<td>50%</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>Difficult</td>
<td>30%</td>
<td>30%</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>100%</td>
<td>100%</td>
<td>40</td>
</tr>
</tbody>
</table>

CHARACTERISTICS OF A GOOD QUESTION PAPER

1. It should test the pre-determined objectives.
2. It should specify a particular task.
3. It should indicate the length of the answer.
4. It should indicate time and marks allotted to each question.
5. The content should be closely related to the objectives being tested.
6. It should have simple and comprehensible language.
7. It should have difficulty level according to the level of the class.
8. It should have a discriminating value to differentiate between below average, average and above average students.

EVALUATION

DIFFERENT TYPES OF TESTS

Education evaluation relates to any procedure that appraises the extents to which educational objectives have been realized. Educational evaluation is an integral part of activities that are meant to provide education to the students. Evaluation is objective based and it calls for a variety of activities and techniques and a judicious selection of these to suit the needs of varying situation. The devices most commonly used the purpose of students achievements are:

1. Observations
2. Interviews
3. Questioners
4. Records
5. Tests
Tests are of three types

1. Oral tests
2. Written tests and
3. Practical tests

The written tests are devised in the form of question papers. In order to test the scholastic aspects of the students, the following types of questions are reflected in the question paper:

1. Essay type
2. Short answer type and
3. Objective type.

1. ESSAY TYPE TESTS:

Essay type questions are subjective in nature. These questions require long answers from students. It gives them considerable freedom of response. The students answering these questions are free to select, organize and present the ideas in their own words. The learning outcomes that may be expected of students through such a question are related to complex set of behavior, which involve selection and organization relevant ideas and ability to express them in their own words. An essay type test by its very nature can include only a few questions say 4 to 5 to be answered in two or three hours. The ability like interpret, argue, explain, analyze and evaluate can be tested through essay type questions. The subjectivity of the essay type tests can be reduced by devoting sufficient time in constructing such questions, defining the directions and scope of answer desired, preparing a tentative scoring key before hand and adopt techniques of reduce scoring errors.

The essay type questions are characterized by the following directional words – discuss, describe, compare, contrast, state, evaluate, explain, elucidate, elaborate etc.

The geographical examples of essay type questions are:

1. Discuss the composition and structure of atmosphere.
2. State the major soil types of India.
3. Explain how agriculture and industry go hand in hand.
4. Outline the progress made by Indian agriculture since independence in the production and productivity of major crops.
5. Compare and contrast the eastern and western coastal plains if India.
6. Discuss the factors which influence the distribution of population in the world.

ADVANTAGES:

1. The essay type tests are easy to prepare.
2. This type of test provides the examinee a scope to express his knowledge, attitude and skills.
3. Essay type tests provide a chance to examinee to express his ability. He finds an opportunity to use words, phrases, analysis, application of rules, principles etc.
4. The tests measure the creativity worth of students.
5. It fosters sound study habits.
6. The students find an opportunity to present answers in their own hand writing and regards as devices for improving writing skills.
7. The personality traits like attitudes towards a problem can be known through essay type tests.

DISADVANTAGES:

1. These tests are subjective in nature and require longtime and duration to answer and score.
2. These tests encourage cramming habits among the students.
3. These tests suffer from subjectivity in grading. The same answer when evaluated by same examiner at different times gets different grades. In addition, the same answer when evaluated by different examiners at the same time gets different grades. These tests lack validity and reliability.
4. It encourages selective study on the part of students.
5. These tests also suffer from objectivity because there is every apprehension that these suffer from examiners personal judgement.
6. These also suffer from validity because these are not generally objective based tests.
7. These also suffer from practicability and are not easy to administer.

SHORT ANSWER TYPE QUESTIONS:

In the short answer type questions, the answer is to be given by the examinee. These questions require brief to the point and limited short answers. Generally the length of the answer is specified. These questions are thought provoking and to the point these questions offer a greater degree of objectivity than other evaluating techniques. These can be easily constructed by a teacher. The answer to these questions can be correctly administered. The scoring of these questions takes less time. More questions of such type can be asked within the same time limit. These questions help in covering maximum number of topics.

Examples:

- Define weather
- What is isobar?
- Why are Himalaya called young folded mountains?
- What are the elements of climate?
- Distinguish between a mountain and a platue?
ADVANTAGES:

1. These are easy to design.
2. Scoring is less subjective and easy.
3. The question paper becomes comprehensive and it covers entire syllabus.
4. This type of test discourages selective study.
5. This type of test can be used in almost all the objectives of teaching.
6. This type of tests ensures validity, reliability and objectivity.
7. Short answer type tests foster study habits among the students.
8. These tests have practicability.

DISADVANTAGES:

1. These tests do not provide students chance to organize and present their ideas.
2. These tests cannot be used to measure the creative worth of students.
3. Personality traits cannot be known through short answer type tests.
4. The students do not find good chance to explain the meaning of words, phrases and application of principles etc.
5. The proficiency in the language development remains unexplored.

OBJECTIVE TYPE TESTS

The tests which require students to write definite and precise answers or to select the correct answer from the given set of alternatives are called objective type tests.

The objective type tests can be divided into two broad categories:

1. Supply type tests and
2. Selective type tests.

1. SUPPLY TYPE TESTS:

The supply type tests require the students to supply rather than select the answers. The students have to write the answers by supplying certain words to fill in the blank spaces provided:

Supply type tests are of two types:

a. Very short answer type
b. Completion type.
1. *Very short answer type:* In the very short answer type tests the answer is supplied by writing a word. Example –
Ques: Name the lowest layer of atmosphere
Ans: Troposphere

2. *Completion type:* In the completion type, the student is supposed to complete the missing word in the sentence. Example –
Ques: ___________ is the capital of Rajasthan.
Ans: Jaipur
The student in the supply type test has to recall the answer.

2. **SELECTIVE TYPE TEST:**
In the selection type tests, the students to recognize and select answers from given set of alternatives. The given set of alternatives may range from to any number. The selection type tests comprise of:
   a. True-false or Alternate Response type.
   b. Multiple choice type and
   c. Matching type tests.

   a. **True-false or Alternate Response type tests:** The true-false or Alternate Response type questions have two possible answers. The students have to select the answer by recognizing the statement to be true or false. Examples:
   • Earth rotates from east to west (T.F)
   • Mercury is the smallest planet of our solar system (T.F)
   • Gandhinagar is the capital of Gujarat (T.F)

   Scoring in such test is quite easy. There is a wide scope for guessing. In this type of test answer is specified and pre-determined. These tests cannot be judged objectively. Suppose on a test of 50 items, a student has attempted 25 items correctly, one cannot know whether the student scoring is due to guessing or it represents his actual learning outcome. These tests cannot be used to measure the students’ knowledge. These tests can be said to possess high objectivity but low validity.

   b. **Multiple choice type tests:** In multiple choice type tests, the student is provided with more than two choices from which he has to select the correct answer. The following is an example of multiple choice type test:

   • The layer of the atmosphere which contains ions is:
     i. Troposphere.
     ii. Ionosphere
     iii. Exosphere
     iv. Thermosphere

   In this type of test item, just as in true-false type, the student is not given any freedom to write his answer, but he selects the best answer or correct answer from the given set of
alternatives. Since there is complete control over the student’s response, this test item is objective. Possibility of guessing the correct answer is considerably reduced. It is better than true-false with respect to reliability and objectivity.

A multiple choice questions consists of an incomplete statement or it can be given in the form of a direct question. The direct question or the incomplete statement is called the stem of the item; whereas suggested answers are called alternatives.

These questions are useful for measuring high learning outcomes, such as understanding, application etc.

c. **Matching type tests:** In the matching type tests a number of statements, phrases or words are given in one column and a set of several alternatives are given in the another column. The students are supposed to match the words, phrases or statements in the two sets. But the B column should be longer than A column or the number of alternatives should be more than number of statements or words or phrases.

Example: Match Column A with Column B

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: Asia</td>
<td>1: Largest desert</td>
</tr>
<tr>
<td>2: Pacific</td>
<td>2: Largest Mountain</td>
</tr>
<tr>
<td>3: Himalaya</td>
<td>3: Largest Continent</td>
</tr>
<tr>
<td>4: Nile</td>
<td>4: Largest Ocean</td>
</tr>
<tr>
<td>5: Sahara</td>
<td>5: Largest River</td>
</tr>
<tr>
<td></td>
<td>6: Largest Plateau</td>
</tr>
</tbody>
</table>

The matching type test can be considered as the modification of multiple choice items. These two tests have better objectivity and reliability.

**ADVANTAGES**

1. These tests provide an easy system of scoring.
2. These involve minimum of writing.
3. These can be used to cover the whole syllabus.
4. These develop thorough study habits.
5. These tests discourage cramming and role memory.
6. These tests are easy to administer.
7. These are highly valid.
8. These tests are reliable and do not suffer from subjectivity on the part of evaluators.
9. These tests do not suffer from subjectivity in grading.

**DISADVANTAGES**

1. These tests are difficult to design or construct and require tremendous efforts on the part of the paper setter.
2. These tests encourage guess work.
3. These tests cannot measure the student’s knowledge.
4. Students do not find any opportunity to express their ideas and apply laws and principles.
5. These tests fail to measure the personality traits.
6. The writing skill is not encouraged.

To conclude, I would like to favour the question paper which contains different types of tests i.e. essay type, short answer type and objective type tests.
CONSTRUCTION OF ACHIEVEMENT TEST

A test is defined as a standardized situation designed to elicit a sample of individual’s behavior. Tests are classified as:
1. Test of ability
2. Test of typical performance and
3. Educational achievement test.

EDUCATIONAL ACHIEVEMENT TEST

Educational achievement test is designed to measure knowledge, comprehension, application and skills in a specified subject or group of subjects. It also includes educational results as attitudes, appreciations, ability to solve problems, to draw inferences from subject matter, to apply generalization to specified situations and problems.

HOW TO CONSTRUCT TEST ITEMS

The following steps are involved in developing the balanced and objective based questions:

1. Instructional objectives.
2. Content analysis.
3. Form of question.
4. Language of questions.
5. Directional words.
6. Difficulty level.
7. Marking schemes.

1. **Instructional Objectives:** The instructional objectives include cognitive, affective and psychomotor domain. Cognitive objectives include knowledge, comprehension, application, analysis synthesis and evaluation. Affective objectives include habits, attitudes, interests, feelings, values, thinking, appreciation etc. psychomotor or co-native objectives various types of skills.

2. **Form of Questions:** The questions have two forms.
   i. Free response type.
   ii. Fixed response type.

   i. The free response type include essay type or long answer type and short answer type questions.
   ii. The fixed response type or objective type questions include supply type tests and selection type tests. In the supply type questions, the students are supposed to supply the
answers. The selection type tests include true-false type or alternate response type, matching type and multiple choice types.

Thus, a balanced question paper must contain essay type, short answer type and selection type questions.

3. **Content Analysis**: A teacher must have deep and thorough knowledge of geography content, in which questions are to be developed. Different content is needed for various types of items while designing a question paper due weightage should be given to the content according to need and importance.

4. **Language of Question**: The language of questions should be simple, clear, concise and unambiguous. The student must easily understand what the question asks.

5. **Directional Words**: The questions must contain simple directional words like explain, describe, discuss, etc. and not words like elucidate, elaborate, enumerate, outline etc.

6. **Difficulty Level**: The question paper must contain easy, average and difficult questions. The proportion of questions should be: easy=20%, average=50% and difficult=30%.

7. **Marking Scheme**: Answer should be given in a Performa. It must contain marking scheme, value points and total marks.
ENVIRONMENT

MAN’S INTERACTION

NEED AND EFFORTS TO IMPROVE QUALITY OF ENVIRONMENT

Environment literally means surroundings of an object or an organism. The natural environment in which man finds himself is composed of land, water and air constitute the physical environment and plants and animals constitute biological environment of man. Man is dependent both on physical and biological environment for his survival. Without natural environment survival of man is impossible on the surface of the earth.

The relationship between man and environment has varied from the early periods of human settlement on the surface of the earth to the present day. This relationship also varies from place to place.

The early man considered environment to be dominant. They were afraid of lightening, thunder, dense forests, wild life, vast oceans and large rivers. They had no tools at their command to overcome the hazards posed by the environment. They worshipped all these aspect of environment.

When the man started making tools out of stones and metals and learnt the use of fire, their impact on the environment came to be felt. Their tools enabled them to cut the trees, to fashion their houses with logs. They set fire to forests and grasslands to make clearings for themselves and their animals. Fire also protected them for cold weather and wild animals. Man used tools for hunting and fishing, which gave some position of dominance over the animals. His activities had very little impact on the environment.

The industrial revolution provided human beings opportunity to modify the environment. Industrial revolution provided man with mechanical power and man became active agent in changing the environment to suit their own needs. At the same time agriculture provided abundant food so that they could settle down permanently instead of wandering from place to place in search of food. This gave man security; they could rear their families in safe houses. The family size grew and people migrated to different parts of the world. Transport by road, rail and water improved and new lands in North America, South America and Australia came to be settled by people from Europe.

Another development to which enabled humans to survive was the progress in medical sciences and technology. Due to this progress, many fatal diseases were prevented; there was general reduction in death rates and increase in the span of human life. The assured food supply protection from diseases and abundance of fossil fuels and other resources helped in the rapid growth of population in the world from the beginning of 20th century.

With population crossing 6 billion by the year 2001, people have started expressing concern with their impact on environment. The environment has been already degraded in certain localities to such an extent that people are forced to migrate. They are facing scarcity of resources like food, water and
energy. Natural hazards like draughts and floods, environmental pollution and accidents on busy roads are taking heavy toll of human lives.

Man’s impact on environment has resulted in environmental pollution. Pollution affects not only air, water and land but also organisms in the biosphere. The natural environment has the capacity to decompose the dead organisms or excreta and recycle them. When harmful substances contaminate the environment in large quantities, the ecosystem is unable to absorb them, resulting in degrading environment. Man’s over-interaction has resulted in the environmental pollution.

1. **AIR POLLUTION:**

The burning of fossil fuels (coal, petroleum and natural gas) has resulted in gradual increase of CO₂ content. CO₂ allows the insulation to pass through but absorbs outgoing terrestrial radiation. It has been estimated that CO₂ has increased by 25% during past two decades. Increase in CO₂ resulted in the increase in the atmospheric temperature. It has been estimated that global mean temperature has increased by about 1°C in the last 100 years. Increase in CO₂ is attributed to large scale deforestation. Trees absorb CO₂ accumulates in the atmosphere. If the CO₂ increases further, in the next 30 years rise in temperature would melt polar ice caps and sea level would rise causing submergence of coastal regions.

Burning of coal and oil also adds SO₂ to the atmosphere. Carbon-monoxide (CO) and Nitrogen Oxide (NO) are added to the atmosphere by automobile exhausts. Inhalation of automobile exhausts cause nasal irritation and respiratory diseases. These gases are also responsible for causing acidic rains in North America and Europe. Acidic rains affect aquatic ecosystem as water so polluted cannot support fish and other life forms. Lakes in Sweden, Norway, Canada and U.S.A are affected by acidification. Acidic rains also affect water to a great extent. Leaves turn yellowish and drop down. Growth of trees is affected. About 600 million hectares of forests are affected in Europe.

The chloro-fluo-carbons(CFC’S) released by air craft’s, refrigerators, coolers, farm blows etc are responsible for depleting ozone layer to the extent of 3% t 4% during the last hundred years. The ozone layer in the atmosphere acts on a shield and protects the earth from the harmful ultra-violet radiation.

Gaseous effluents from factories pollute the atmosphere smoke, dust particles, carbon, lead etc enter the atmosphere on cool nights when fog occurs, these particles remain suspended in the atmosphere. This condition is called smog. The smog over London in 1952 resulted in the death of 400 persons by suffocation. Air pollution is of global significance. Air pollution transfers pollutants to land, rivers and oceans as a result of rainfall. Air pollution affects plants animals and as well as human beings.

2. **LAND DEGRADATION:**

Land degradation is caused due to wide spread erosion by wind and rivers. Dumping of solid waste from urban centers and waste materials from mining centers render the land unsuitable for any use. In semi-arid areas, the widespread deposition of sand and dust by action of wind render them unsuitable
for agricultural use. This marks the beginning of the process of desertification. Deposition of rocks and sand during floods also cause damage to the cultivated land.

3. **WATER POLLUTION:**

Water pollution takes place when the effluents from the factories are let into rivers. Paper mills, sugar mills, tanneries let them in the rivers or allow them to stagnate on land. These pollutants seep through and pollute underground water.

   The most wide spread source of water pollution is disposal of sewage of urban centers into rivers. All the rivers of India especially Ganga and Yamuna are polluted by sewage disposal. Polluted water affects organic life in rivers and water borne diseases like jaundice, dysentery and typhoid affect human population.

   Water pollution also occurs due to pesticides, weedicides and fertilizers. Water draining from these fields enters rivers and lakes and pollutes them.

   Ocean waters are polluted by discharge of sewage from cities located along the coast, effluents from factories located along the coast and discharge from polluted rivers. In the open oceans oil spilt from tankers, pipes and oil wells in seas has adverse affect on marine life.

4. **HUMAN IMPACT ON BIOSPHERES:**

   Human activities have severely affected the biosphere. Forests are being cleared at a faster rate to make land available for agriculture and settlements. This has destroyed the habitat of wild animals. Indiscriminate hunting of animals for fur and bones has led to extinction of some species. The removal of original plant cover and its replacement by single agricultural crop, reduced the biological diversity, simplifies the ecosystem making it vulnerable to pests, which attract the particular crop.

5. **DEPLETION OF RESOURCES:**

   Population increase in the recent past and increasing consumption has resulted in the rapid depletion of all kinds of resources. The most striking example of such depletion is food deficit faced by about hundred countries of the world. In most of the African countries deforestation soil erosion and lowering of water table have been responsible for the gradual decline in the crop field. Lack of food for animals has resulted in the loss of domestic animals. People in these countries suffer from malnutrition and easily prone to disease.

   Forest and soil resources are getting depleted owing the pressure of population. Scarcity of fuel wood and its increasing loss affects the poor people. The renewable resources like forest and soil are becoming non renewable.
Minerals are being consumed at faster rate owing to increase in demand. Except iron ore other metallic mineral will only last for a few decades. Increasing demand has led to increase in price, leading to recycling of scrubs and use of substitutes like plastics and wood.

The world is facing an energy crisis at the existing resources of oil may last for only a few decades. Though coal reserves are at great for a few countries, it cannot replace oil especially for transport.

ENVIRONMENTAL PLANNING

Humans have to realize that their economic activities are threatening their survival on the surface of the earth. Their survival depends on the realization that they have to live in harmony with various elements of environment which are interconnected and understanding of the components and process which take place in the environment the relationship between biotic and a biotic components and assessment of resource with reference to need of the people in a region is essential for their survival.

Renewable resources should be used as judiciously as possible. Man has to actively participate in plantation of trees to avoid soil erosion. Prevent floods, increase the level of underground water provide habitat to wild animals and birds to increase the oxygen level in the atmosphere to maintain the atmosphere temperature, control noise pollution and save atmosphere from pollution. Unauthorized felling of tress for timber, trade and fuel, consumption should be curbed with heavy hands.

Conservation of oil is an urgent need. Use of more efficient engines would reduce the consumption use of renewable resource of energy in greater quantities would also make it available for longer period of time.

The non-biodegradable waste materials such as aluminium canes, plastics, D.D.T etc. are the major pollutants. They need to be replaced by some efficient materials which will decay easily.

Pollution resulting from industrial wastes should be reduced. The smoke from automobile and factories can be minimized if vehicles are maintained properly and emission of toxic fumes can be reduced.

Radio-active wastes produced in nuclear reactors, laboratories, hospitals etc, release high energy particles are dangerous for human life. Special techniques of storage and disposal of radio-active sources and waste needs to be employed and strict and sound vigilance maintained against the leakage of any radio-active material.

Soil can be conserved by using good methods of cultivation, control plugging, reducing, over-grazing, planting trees and using bio-fertilizers, acid of chemical fertilizers.

The education of mass plays very important role in conserving the natural environment and to preserve the same for future generation.
WORLD POPULATION

Geography is the study of man and his environment. Man is the central theme in geography. Man is the cream of creation. He is the creator, producer and consumer. There is no part of the earth which is not touched by the man. To understand geography properly, it is necessary to know the distribution of population in the world.

According to 2001 census, the estimated population of the world is 6.13 billion. Out of the total population, 75.5% is concentrated in the developing and under developed countries of the world and only 24.5% in the developed countries of Europe, North America, South America, Japan, Australia and Newzealand.

Hemisphere wise 90% of the total population of the world is concentrated in the northern hemisphere 10% in the southern hemisphere.

Continent wise, the distribution of population is as under:

- Asia = 61.2 %
- Africa = 11.5%
- North America= 5.4%
- South America = 8.4 %
- Europe+Russia = 13% and Oceania= 0.5 %

Country wise China is the largest populated country in the world. With a population of 1.20 billion, it comprises of 20% of the total population of the world. China is followed by India. The population of India according to 2001 census is 1.05 billion. It comprises of 16% of the total population of the world. The next in order are USA (26 million), Indonesia (19 million), Russia (15 million), Brazil (14.6 million), Pakistan (13 million), Japan (12 million), Bangladesh (11.8 million) and Nigeria (10 million).

DENSITY OF POPULATION:

Population distribution is more locational, while as population density is more proportioned. Population distribution is the spatial distribution in which the population finds its location. Population density means the relationship that exists between size of population and the area. Density of population is expressed in a number of ways. The two important ways are:

1) Arithmetic Density = Total population/total area
   expressed in terms of persons per sq. Km.
2) Physiological Density or Nutrition Density= total population/total agriculture area
   expressed in number of persons per sq. km. of arable land.

The average arithmetic density of population in the world is about 41 persons per square km. The actual density of population varies from place to place, region to region and country to country depending on environmental and socio-economic condition. The density may vary from less than one person per sq. km. In desert to over 1000 persons per sq. km in different areas whereas the area of density are large areas are small and scattered. Such unevenness in the distribution of population is
found not only in the world as whole, but also in each region and country. There are number of factors responsible for such uneven distribution.

**FACTORS AFFECTING THE DISTRIBUTION OF POPULATION:**

The population distribution pattern is ever changing. The main factors which affect the population distribution are:

1. Physical Factors and
2. Non Physical factors

**1. Physical Factors:**

The physical factors which affect the distribution of population are:

i) **Location:** About 66% of the world population is concentrated upto the distance of 500 kms from the sea and 75% upto the distance of 1000 kms from the sea. These figures indicate that coasts are densely populated. This is because the coastal areas experience moderate climate and have increased accessibility to all the regions.

ii) **Climate:** The most important physical factor which determines the population in any region is the climate. The equatorial region which experiences hot and humid climates is hostile for the people and has small concentration of population. Cold climates are also not suitable for population concentration and are sparsely populated. The hot deserts of the world, where temperature remains very high and have scarcity of water also do not attract people. The areas where favorable climatic conditions prevail are densely populated.

iii) **Relief:** The relief features of the earth exert tremendous influence upon the distribution of population in different parts of the world. High and rugged relief restricts human access, habitation and cultivation. Almost all the mountainous areas of the world do not favour the human settlements and that is why population in such areas is sparse. The plains and valleys support human activity and are densely populated.

iv) **Soils:** Soil is the medium on which crops are cultivated. The soils supply us with the three basic necessities of life i.e. food, clothing and shelter. The areas with fertile soil support large population and attract large population and attract large population. The fertile soils are densely populated. On the other hand the areas with infertile soils are sparsely populated.

v) **Energy Resources:** The regions which are rich in minerals and energy resources attract the people for the exploitation of these resources for the economic upliftment of their living standards. Petroleum and coal form the basis for modern industrial development and where minerals are found, the population is dense.

vi) **Altitude:** It has been found that the density of population decreases with altitude. Nearly 80% of the world population concentrated upto the height of 500 mts above sea level. High altitudes impose limitation upon human habitation due to drastic reduction of atmospheric pressure and reduction of oxygen level, which are dangerous for human life.
2. **NON-PHYSICAL FACTORS:**

The non-physical factors which determine the distribution of population are:

i) **Historical Factors:** The cities of early civilization are generally crowded because they got settled early;

ii) **Demographic Factors:** They include regional distribution of fertility, mortality and migration trends;

iii) **Urbanization:** Urban areas are densely populated than rural areas;

iv) **Modern Facilities:** The areas with modern facilities i.e. network of roads and communication, hospitals, drinking water, electricity, educational facilities, computer network tend to be densely populated;

v) **Cultural Factors:** These include social attitudes stages of economic development and political organization.

**WORLD DISTRIBUTION OF POPULATION**

The world has been divided into three zones on the basis of density of population:

1) **Region of High Density:** The regions of high density include those areas where the density of population is above 250 persons per sq. km. Four zones of high density are found in the world:

i) **Eastern Area:** which include Japan, China and Korea;

ii) **Southern Asia:** Comprising of India, Pakistan and Bangladesh;

iii) **North-West Europe:** which includes Great Britain, Belgium, Netherlands, Denmark and Germany;

iv) **North Eastern United States:** Comprising the region between Great Lakes and Atlantic Coast.

The high density in Eastern Asia and Southern Asia is due to intensive agriculture in low lands receiving adequate rains or irrigation facilities. Similar high density prevails in Nile valley in Africa and the Islands of Java in Indonesia. These are regions of intensive agriculture. The regions in Europe and USA have high density of population due to industrialization and urbanization;

2) **Regions of Moderate Density:** Moderate density of population occurs in the river valleys of South-East Asia, Central and Southern Europe, regions of South America and South Africa. These are the regions of extensive agriculture and pastoral activities with some industrial development;

3) **Regions of Low Density:** These include 80% of the land area, which is too rugged, too hot or too cold, too wet or too dry for the people to live in large number and engage in productive occupation. The Polar Regions such as Antarctica and Greenland are extremely cold and are sparsely populated. The high mountains and dissect plateaus such as those in Central Asia have rugged relief which renders settlements rather difficult except in accessible areas. The equatorial rain forest regions are inhospitable
to live. The tropical deserts like Sahara and Australia don’t favour human settlements except oasis. In such inhospitable forests, deserts or mountainous regions, small numbers of nomads inhabit the area.

**GROWTH OF POPULATION:**

The human population remains changing all the time. If the conditions are favorable, food supplies are adequate and regular and there are no natural calamities, the population tends to increase with the passage of time. On the other hand, if the conditions are adverse, food supplies are short of requirements and calamities such as draughts, floods, and epidemics commonly occur, the population is likely to decline. Moreover, people remain in the move all the time.

A growth of population implies a change between two given points in time. The net change in population between two points in time is expressed in percentage and is described as growth of population. Growth may be positive or negative. Growth may be negative, if there is decrease in population between two points in time. It may be positive if there is increase in population between points in time.

The factors which determine the growth of population are:

1. Birth rate
2. Death rate and
3. Migration.

**1. Birth Rate:** Birth rate refers to number of live births per thousand population per year. The present birth rate (2001) of the world is 26/1000 or 1.6 %

**2. Death Rate:** Death rate refers to number of deaths per thousand population year. The present death rate of the world is 9/1000 or 0.9%.

The difference between birth rate and death rate is known as natural growth rate. It is expressed in percentage. The present growth rate of population is 26-9=17 means 17 persons are added to per thousand world population per year. The percentage of growth rate is 1.7%.

**3. Migration:** Migration is defined as the movement of an individual or a group from one place of residence to settle in another, either permanently or semi-permanently. Together with fertility and mortality, migration is one of the chief elements determining population change in an area. Migration results in the redistribution of population.

Migration is of two types’ i.e. immigration and emigration. Immigration refers to the migration of people into a country from other countries. Emigration refers to the migration of persons from a country to other countries. Population of a country also increases when immigration exceeds emigration. As many countries have imposed restrictions of migration, this is no longer a factor for increase or decrease of population on a large scale.
During the early periods of human population the population growth was extremely slow. Though the birth rates were very high, scarcity of food, hostile environment and prevalence of diseases resulted in the high death rate, which balanced birth rate. Population, therefore, remained stationary or declined owing to famines and epidemics. High death rates necessitated high birth rates to assure survival of mankind.

The Neolithic period of human history marked the beginning of agriculture. Man started leading a settled life. Food supply was assured and large numbers of people were needed for clearing and cultivating the land with settled life and assured food supply death rate declined gradually while birth rate remained high. Population increased rather slowly. At the beginning of the Christian era, the population of the world was around 300 million.

The growth of population continued to be slow up to Industrial revolution. Industrial revolution made possible the surplus production of commodities. The industrial revolution was followed by migration of people from Europe to North America, South America, Australia and Africa. Thus the population of these continents increased due to immigration.

Along with the industrial revolution, there were a number of advances in the field of medicine, which result in the control of plague, small pox, malaria, and other deadly diseases. Thus the death rate was gradually reduced due to better medical facilities, protected water supply, sanitation and other preventive measures. The rate of growth of population increased and reached to 1000 million in 1850.

With the opening of new lands in North America, South America and Australia, new settlements came up and population increased by migration as well. In giant countries of Asia, India and Indonesia provision of medical facilities reduced the death rates rapidly and hence the population greater in 20th century.

World population reached to two billion in 1930. After 1930, the rate of growth of population was much faster and by 1975, it reached to 4 billion. Another billion or 1000 million was added in next 12years and in 1998 it reached to 5 billion. In 1992 it was 5.5 billion. The world population census reveals that in 2001 it crossed the 6 billion mark and was 6.13 billion. The process continued and in the beginning of 2005 it was 6.35 billion.

REGIONAL VARIATIONS

World may be divided into two major regions on the basis of population growth:

1. Developed countries and
2. Developing and under developed countries.

1. Developed countries:

In developed countries in Europe, North America, Russia, Australia, Japan and Newzealand the population growth is less than 1% per year. These countries have low birth rates and low death rates. In
Sweden and Switzerland death rate is slightly higher than birth rate, indicating decline in population. In the developed countries birth rates have declined along with death rates.

2. Developing and Under-Developed Countries:

The developing nations and under developed nations in Asia, South America and Africa are having annual growth rate exceeding 2% per annum. These countries have high birth rate and low death rate. Afghanistan has highest birth rate of 6.7% per annum. In these countries while the death rate has decreased owing to better medical facilities, birth rate has remained high. China with the largest population (1.22 billion) has reduced its birth rate in the recent years and annual growth rate is only 1.7%. India with the second largest population has the growth rate of 1.9% per year.

Rapid growth rate of population in the developing countries have added many problems. The problems are:

1. Environmental degradation, due to deforestation, soil erosion, air pollution, noise pollution, deforestation, soil depletion, water pollution, lowering of water table, etc.
2. Unhygienic conditions.
3. Shortage of food supply.
5. Illiteracy.
6. Large proportion of dependents especially children.
7. Weak Industrial base.
8. Tradition bound societies.
9. Congestion of urban areas.
10. Unemployment.
11. Low standard of life.
12. Low per capita income
13. Economic instability
14. Depletion of resources
18. High pressure on land
19. Fragmentation of land holdings
20. Problem of housing
21. Poverty, etc.