1. Details of Module and its structure

Module Detail	
Subject Name	Geography
Course Name	Geography 01 (Class XI, Semester - 1)
Module Name/Title	Branches of Geography – Part 2
Module Id	kegy_10102
Pre-requisites	Basic understanding of Geography as a discipline and its broad divisions
Objectives	After going through this Module, the learners will be able to : • Describe the systematic and regional approaches of Geography; • Discuss the different branches of Geography and its scope • Explain the Importance of physical geography
Keywords	Systematic geography, Regional geography, Dualism, Physical geography

2. Development Team

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Introduction

Geography is a holistic and interdisciplinary field of study engaged in understanding the changing spatial structure from past to the future. Today geography is the only discipline that brings all natural and human sciences on a common platform to understand the dynamics of the spatial configuration of earth surface. It is an interdisciplinary and integrative science having numerous branches.

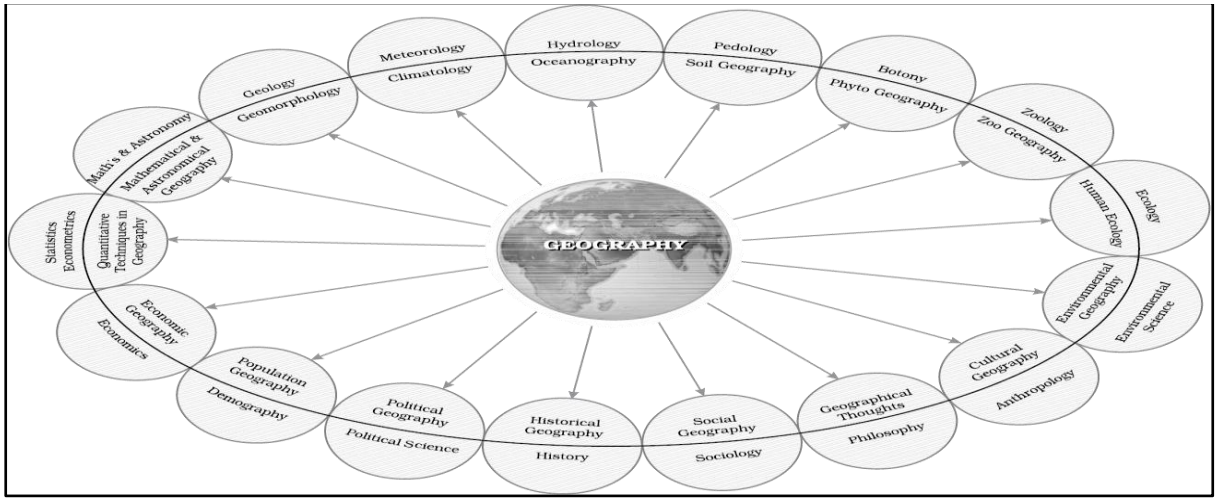

Fig. No. 01 Geography and its relation with other subjects

Approaches of geography

It has very clearly brought out that geography is an interdisciplinary subject of study. The study of every subject is done according to some approach. Variable phenomena on the earth's surface can be treated separately or in association with each other. The study of every subject is done according to some approach. The major approaches to study geography have been (i) Systematic and (ii) Regional. The systematic geography approach is the same as that

of general geography. This approach was introduced by *Alexander Von Humboldt*, a German geographer (1769-1859)while regional geography approach was developed by another German geographer and a contemporary of Humboldt, *Karl Ritter* (1779-1859)

The systematic geography approach

The systematic geography approach is the same as that of general geography. This approach was introduced by Alexander Von Humboldt, a German geographer (1769-1859). A study of Specific natural or social phenomenon that gives rise in certain spatial patterns and structures on the earth surface is called systematic study. In this approach a phenomenon is studied world over as a whole, and then the identification of typologies or spatial patterns is done. For example, if one is interested in studying natural vegetation, the study will be done at the world level as a first step. The typologies such as equatorial rain forests or softwood conical forests or monsoon forests, etc. will be identified, discussed and delimited.

Fig. No. 02 Alexander Von Humboldt

https://commons.wikimedia.org/wiki/File:Alexander_von_Humboldt-selfportrait.jpg

Regional geography approach

This approach was developed by another German geographer and a contemporary of Humboldt, Karl Ritter (1779-1859). In the regional approach, the world is divided into regions at different hierarchical levels and then all the geographical phenomena in a particular region are studied. These regions may be natural, political or designated region. The phenomena in a region are studied in a holistic manner searching for unity in diversity.

Systematic and regional geography are not dichotomous but complementary to each other. The difference in systematic and regional approach is not in terms of subject matter rather it is methodology to perceive the things which leads to this false dichotomy. The selection of the approach between systematic and regional depends upon the purpose of the study. If an individual has to concentrate on single phenomena he will adopt a systematic approach and if more than one phenomena or complex inter-relationship of phenomena in any region is to be

studied than one has to adopt a regional approach.

Fig. No. 03 Karl Ritter

https://commons.wikimedia.org/wiki/File:Carl_ritter.jpg

Dualism in Geography

Dualism is one of the main characteristics of geography which got introduced from the very beginning. This dualism depended on the aspect emphasised in the study. Earlier scholars laid emphasis on physical geography. In geography, the controversy of dualism emerges in physical and human geography, that is, the features on earth surface is the result of nature (excluding man) and man respectively. However, exclusion of man from nature is not feasible as man is also an inseparable part of nature. This dualism depended on the aspect emphasised in the study. It did not arise from internal need in geographic study but from philosophical abstraction. Earlier scholars laid emphasis on physical geography. But human beings are an integral part of the earth's surface. They are part and parcel of nature. They also have contributed through their cultural development. This developed human geography with emphasis on human activities.

Branches of geography based on systematic approach

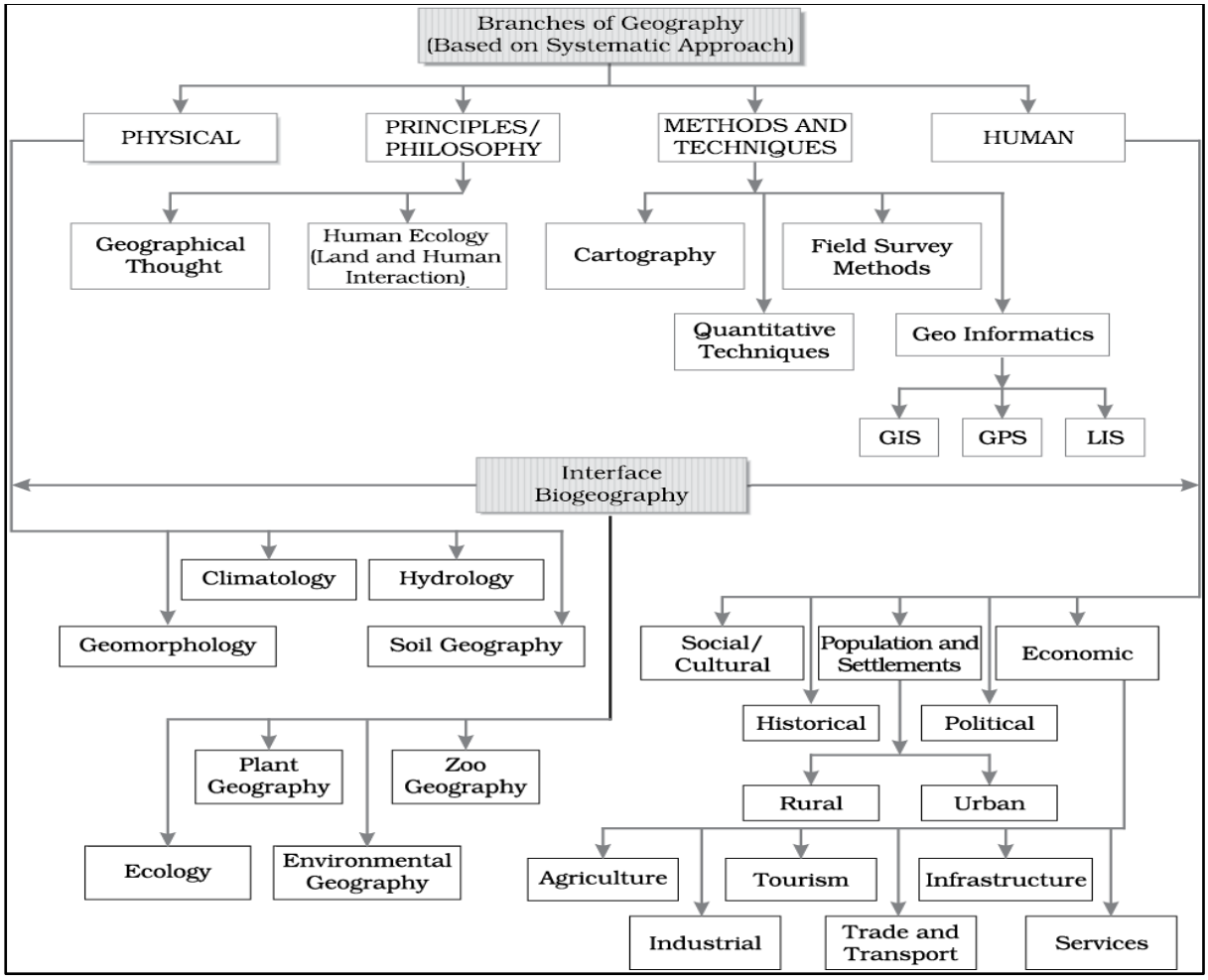

Fig. No. 04: Branches of geography based on systematic approach

Based on systematic approach, geography has the following sub-fields / branches:

1. **Physical Geography**: Physical geography is concerned with the study of atmosphere, lithosphere, hydrosphere and biosphere including mountain, plateaus, plains, rivers, soils, vegetation, wildlife etc The sub-parts of physical geography are described below:

i. ***Geomorphology*** This branch of geography is devoted to the study of landforms found on the earth, their evolution and related processes.

ii. ***Climatology***: Climatology is related to meteorology. It encompasses the study of structure of atmosphere and elements of weather and climates such as temperature, precipitation, air pressure, winds etc. and also the climatic types and

regions.Climatology examines both the nature of micro (local) and macro (global) climates and the natural and human influences on them.

iii. ***Hydrology***: Hydrology is an emerging branch of geography which studies the realm of water over the surface of the earth including oceans, lakes, rivers and other water bodies and its effect on different life forms including human life and their activities..

iv. **Soil Geography**: This branch of geography is devoted to study the processes of soil formation, soil types, main features, their fertility status, distribution and land-use.

2. *Human Geography*

Human geography is that branch of social sciences which deals with the world, its people and various communities, their cultures, economies and activities such as agriculture, industry, trade, tourism, settlements like villages, cities, and towns etc. In human geography generally, qualitative and quantitative research methods are used to study the human activities. On the basis of the degree of specialisation, human geography has also been divided in the following sub-fields:

i. **Social/Cultural Geography:** Cultural or Social geography encompasses the study of society and its spatial dynamics as well as the cultural elements such as food, dress, home, religion, buildings, schools, parks, roads, languages, social institutions, arts and crafts, economy, governments etc. contributed by the society.

ii. **Population and Settlement Geography:** Population of the world, of a country or of an area, its birth rate, death rate, literacy, health policy, national population policy, population growth, distribution, density, sex ratio, migration and occupational structure etc. is the main concern of population geography. Settlement geography includes urban and rural geography and studies the spatial, relational and theoretical aspects of settlement there. The characteristics of rural and urban settlements including the types of houses, human settlements in villages and cities, settlement patterns from a small village to modern metropolitan cities are also studied in population and settlement geography.

iii. **Economic Geography:** In this sub-field of human geography economic activities of the people are studied. These activities include agriculture, industry, tourism, trade, and transport, infrastructure and services, etc. Economic geography also examines the relationship between human economic systems, states and other factors.

iv. **Historical Geography:** This branch of human geography studies the historical processes through which the space gets organized. Every region has undergone some historical experiences before attaining the present day status. The geographical features also experience temporal changes and these form the concerns of historical geography. Many historical geographers study geographical patterns through time, including how people have interacted with their environment, and created the cultural landscape.

v. **Political Geography:** Political geography looks at the space from the angle of political events and studies boundaries, space relations between neighboring political units, delimitation of constituencies, election scenario and develops theoretical framework to understand the political behavior of the population. It also studies the challenges faced by countries, proper use of resources for regional development and regional planning.

3. *Biogeography:*

The interface between physical geography and human geography has led to the development of biogeography. Biogeography emerged as a field of study due to the work of Alfred Russel Wallace.

Fig. No. 05 Alfred Russel Wallace.

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Biogeography includes the following sub-fields

i. Plant Geography which studies the spatial pattern of natural vegetation in their habitats.

ii. Zoo Geography which studies the spatial patterns and geographic characteristics of animals and their habitats.

iii. Ecology/Ecosystem deals with the scientific study of the habitats characteristic of species. Ecosystem ecology examines physical and biological structures and examines how these ecosystem characteristics interact with each other.

iv. Environmental Geography: It studies the quality of living environment and its implications for human welfare. It concerns world over leading to the realization of environmental problems such as land gradation, pollution and concerns for conservation has resulted in the introduction of this new branch in geography.

Branches of geography based on regional approach

Unlike systematic geography, regional geography starts with the spatial imprints of one or all the systematic geographic processes discernible as regions of different sizes. Regions could be based on a single factor like relief, rainfall, vegetation, per capita income, literacy and so on. They could also be multifactor regions created by the association of two or more factors. Administrative areas like states, districts, tehsils/taluks, and revenue villages also can be treated as regions, even if they have no rationale other than convenience. For planning and development purposes, one can form specialised regions. Identification of the relevant geographical characteristics of a region: study of interplay between nature and human and its regional implications; delimitation of regions using given criteria; tracing of mutual relationship among the regions, both vertical and horizontal; finding regional structures of economy, society, and polity; and regional planning for problem areas and regions, are some of the principle concerns of regional geography

In regional geography approach, different regions of the earth from smaller to bigger in size are studied with the aim to understand their characteristics that consist of both natural and human elements. This study also includes delimitation of boundaries of these regions. A region is that part of the earth which has certain identical geographical features (such as climate, vegetation etc.) or man-made features (such as language, religion, government etc.) which in unison give the region a distinct identity of its own and also separate it from the rest. Climatic regions, industrial regions, equatorial regions, Mediterranean region etc. are some of the examples of different regions of the earth.

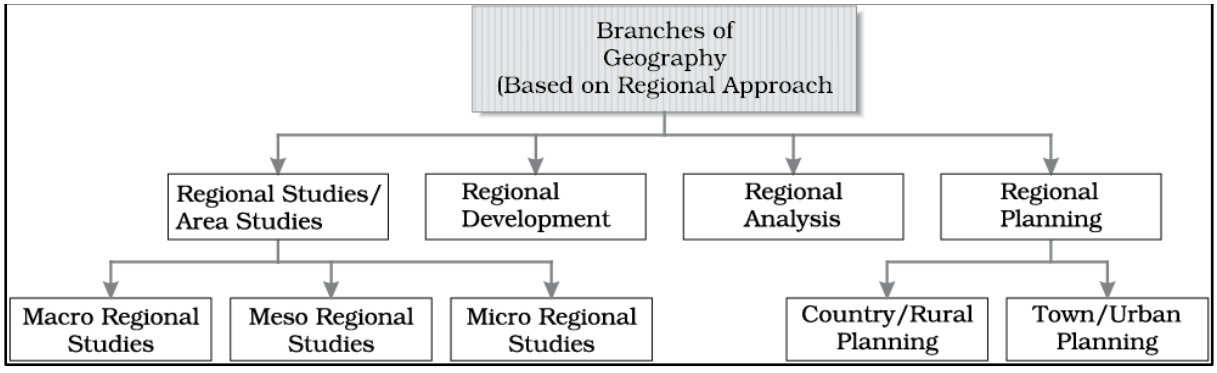

Fig. No. 06 Branches of geography based on Regional approach

Based on regional approach, geography has the following sub-fields / branches :

1. Regional Studies/Area Studies: Regional studies are done at various levels such as:

- Macro Regional Studies: These regional studies are concerned with large areas taken together for a study. For example, studying earth as a whole or continent-wise or as a natural region of the world.
- Meso Regional Studies: Meso means medium sized. Continents further can be studied country-wise or region-wise for Meso regional studies.
- Micro Regional Studies: Further sub-divisions of a country are the districts, Blocks, tehsils, sub-watersheds that are example of micro regional studies.

2. Regional Planning: Regional planning can be done at following levels:

- Rural planning is done for villages and rural areas.
- Town/ Urban Planning which is done for towns/ cities /metropolitan cities etc.

3. Regional Development: The regions which are economically and infrastructure wise less developed are studied carefully and planning strategies are evolved on the basis of available resource base. The implications and scope of regional development may therefore, vary in accordance with the delimitation of a region.

4. Regional Analysis: Regional analysis is concerned with the core part of geography in which problems related to land use, urban development, rural development, regional policy, resource management, migration or environmental and ecological aspects are studied and analysed. There are two aspects that are common to every discipline, these are:

(i) Philosophy:

(a) Geographical Thought

(b) Land and Human Interaction/ Human Ecology

(ii) Methods and Techniques:

Geography is a science and like other scientific subjects we also make use of scientific methods and techniques for the study of geographical phenomena. The attributes are

collected, processed and interpreted further. Geographers collect information from various sources and then present the collected data using the techniques like statistical form, charts, maps, graphs, projections etc. These techniques are:

a) Cartography including Computer Cartography: In this method, data collected from different sources is transformed into cartographic form. The data in tabular form is transformed into visual form which easily understood. For example, maps or charts can be explained to arrive at a conclusion.

b) Quantitative Techniques/Statistical Techniques: These methods include polling, interviews, questionnaires and surveys etc. Using these techniques data is collected from various sources depending upon the nature of study. Collected data is tabulated and analyzed. The quantitative techniques such as measures of central tendency, correlation and regression etc are applied to examine the relationship between variables to draw inferences.

c) Field Survey Methods: Field survey is a collection of information about the problem in hand or chosen. Collecting information from field observations, interviews and collecting data through questionnaire are the techniques used in field surveys.

d) Geo-informatics comprising techniques such as Remote Sensing, GIS, and GPS: Geo-informatics is a broad term that can refer to a number of different technologies, processes, and methods.

The above classification of geography gives a comprehensive format to know the branches of geography. Generally, geography curricula is taught and learnt in this format but this format is not static. Any discipline is bound to grow with new ideas, problems, methods and techniques. For example, earlier what we used to study in manual cartography has now been transformed into computer cartography. Technology has enabled scholars to handle large quantum of data. The internet provides extensive information. The internet providesextensive information. Thus, the capacity to attempt analysis has increased tremendously. GIS has further opened vistas of knowledge. GPS has become a handy tool to find out exact locations. Technologies have enhanced the capacity of attempting synthesis with sound theoretical understanding.

Physical geography and its importance

Physical geography includes the study of lithosphere (landforms, drainage and relief), atmosphere (its Composition, structure, elements and controls of weather and climate; temperature, pressure, winds, precipitation, climatic types, etc.), hydrosphere (oceans, seas, lakes and associated features with water realm) and biosphere (life forms including human beings and macro-organisms and their sustaining mechanism, viz. Food chain, ecological parameters and ecological balance). Soils are formed through the process of paedogenesis and depend upon the parent rocks, climate, biological activity and time. Time provides maturity to soils and helps in the development of soil profiles. Soils are renewable resources, which influence a number of economic activities such as agriculture Each element is important for human beings. Landforms provide the base on which human activities are located. The plains are utilised for agriculture, industry and urbanization. Plateaus provide forests and minerals. Mountains provide pastures, forests, tourist spots/health resorts and are sources of rivers providing water to lowlands. Climate influences our house types, clothing and food habits. The climate has a profound effect on vegetation, cropping pattern, livestock farming and some industries, etc. Human beings have developed technologies which modify climatic elements in a restricted space such as air conditioners and coolers. Temperature and precipitation ensure the density of forests and quality of grassland. In India, monsoonal rainfall sets the agriculture rhythm in motion. Precipitation recharges the ground water aquifers which later provide water for agriculture and domestic use. We study oceans which are the store house of resources. Besides fish and other sea-food, oceans are rich in mineral resources. India has developed the technology for collecting manganese nodules from oceanic bed. Soils are renewable resources, which influence a number of economic activities such as agriculture. The fertility of the soil is both naturally determined and culturally induced. Soils also provide the basis for the biosphere accommodating plants, animals and micro Organisms.

Conclusion

Geography being one of the important subjects for understanding the spatial attributes of the earth in relation with the components of physical and human aspects includes physical geography as a science that studies the earth’s surface and its characteristics representing spatial relationships and varying regional patterns among the land surface and its features (lithosphere), the water surface and its characteristics (hydrosphere), the gaseous envelop

surrounding the earth (atmosphere) and the living organisms in the environment (biosphere). Human geography studies the patterns of distribution of human population, there socio-economic activities in their environment/ecological niche. It includes studies of population patterns as well as social, cultural, political, and economic aspects of people.

The study of physical geography is emerging as a discipline of evaluating and managing natural resources for economic development. In order to achieve this objective, it is essential to understand the intricate relationship between physical and social environment. Physical environment provides resources, and human beings utilise these resources with the help of their technological development and attain their economic and cultural development. If the physical forces bring frequent disasters like floods, earthquakes, droughts and cyclonic storms like Phailin, Hoodhood and Katrina etc and social tensions occurring due to one decision or the other, economic development cannot be ensured. Accelerated pace of resource utilisation with the help of modern technology has created ecological imbalance in the world. Hence, a better understanding of physical environment is absolutely essential for sustainable development.