**Models in Geography: Meaning, Types and Significance**

**What is Model:** The term model was first used by Neils Bohr who used atom model in chemistry. Edward Ackerman who divided the world into population resource regions used the term model first in geography. Latter Peter Haggett , Chorley etc. developed it.

A model is defined as an idealized and structured representation of reality or simplified representation of reality to understand how things work and will work.

The term ‘model’ has been defined differently by different geographers.

**In the opinion of Skilling (1964),** “a model is either a theory, a law, a hypothesis, or a structured idea. Most important, from the geographical point of view, it can also include reasoning about the real world (physical and cultural landscape).” **Chorley and Haggett** also supported the view of Skilling.

**In the opinion of R.L. Ackoff,** “a model may be regarded as the formal presentation of a theory or law using the tools of logic and mathematics”.

**According to Haines-Young and Petch**, “any device or mechanism which generates a prediction is a model”. Accordingly, modeling, like experimentation and observation, is simply an activity which enables testing and critical examination.

**Characteristic Features of Model:**

**The main features of a model are as under:**

1. A model does not include all the physical and cultural attributes of a macro or micro region. In fact, model is a highly selective attitude to information.
2. Models give more prominence to some features and obscure and distort some others.
3. Models contain suggestions for generalization. As stated above, predictions can be made about the real world with the help of models.
4. Models tempt us to formulate hypothesis and help us in generalizing and theory-building. So Models form stepping-stones to the building of theories and laws.
5. Models show some features of the real world in a more familiar, simplified, observable, accessible, easily formulated or controllable form, from which conclusions can be drawn.

**Significance of Model in Geography:**

Most of the geographers of the post-Second World War period have widely conceived models as idealized or simplified representation of reality (geographic landscape and man-nature relationship). The reasons are as follows-

1. Geography is a discipline which deals with the interpretation of man-nature relationship. The earth—the real document of geographical studies—is however, quite complex and cannot be comprehended easily. One of the most striking characteristics of geographical analysis which has in common with other natural and social science is the high degree of ambiguity presented by the subject. Therefore model building is essentially inevitable in geography to simplify the complexity of the earth’s phenomena.
2. The subject matter of geography, i.e., the complex relationship of man and environment can be examined and studied scientifically by means of hypotheses, models and theories. The basic aim of all models is to simplify a complex situation and thus render it more amenable to investigations. In fact, models are tools that allow theories to be tested. A more restricted view of models is that they are predictive devices.
3. A model-based approach is often the only possible means for arriving at any kind of quantification or formal measurement of unobserved or unobservable phenomena. Models help in estimations, forecasts, simulations, interpolation and generation of data. The future growth and density of population, use of land, and intensity of cropping, migration pattern of population, industrialization, urbanization and growth of slums may be predicted with the help of such models. Locational theories of industries, zoning of agricultural land use, patterns of migration and stages of development of landforms can be easily understood and predicted with the help of models.
4. These are very useful in the forecast of weather, change of climate, change in sea level, environmental pollution, soil erosion, forests depletion and evolution of landforms.

A model helps in describing, analyzing and simplifying a geographical system.

**Types of Models:**

As described earlier, the term ‘model’ has been used in a great variety of contexts. Owing to the great variety, it is difficult to define even the broad types of models without ambiguity. One division is between **the descriptive** and **the normative**.

**The descriptive model** is concerned with some stylistic description of reality whereas **the normative model** deals with what might be expected to occur under certain stated or assumed conditions. **Descriptive model** is a type of model that describes things as they are, without trying to explain why they are that way.

Contrary to this, **normative models** (input-output model involve the use of a more familiar situation as a model in time or spatial context and it has a strongly predictive connotation.