

SYLLABUS FOR M.Sc ENTRANCE EXAM IN GEOGRAPHY

UNIT-1

PHYSICAL GEOGRAPHY -LAND FORMS

Field and Scope of physical geography,
Development of physical geography,
Distribution of land and water bodies, a. Tetrahedron theory, b. Continental drift theory of Wegener.
Structure and composition of the earth
Rock-Origin, type, Characteristics,
Weathering of rocks-physical, chemical and biological,
Forces of the earth-acrogenic and Epirogenic Folds and faults,
Earthquakes and Volcanoes, causes, effects, distribution and related land forms.
Major landforms – Mountains, plateau and plains- Evolution, types and characteristics.
Denudation –a. River b. Glacier c. Wind d. Underground water.

UNIT-2

ATMOSPHERE AND HYDROSPHERE

Atmosphere structure and composition
Weather and climate-meaning and factors
Atmospheric temperature-distribution, pressure and horizontal
Atmospheric pressure – pressure belts
Winds-planetary, seasonal and local.
Cyclones-tropical and temperate, anticyclones,
Humidity- Absolute and temperate, anticyclones, Condensation-clouds, types
Precipitation-Rainfall, types
Submarine topography-Continental shelf, slope, deeps, Abyssal plain, ridges
Temperature and salinity of the ocean water.
Movements of ocean water-tides Currents-Atlantic, Pacific and India Ocean.
Coral reefs and atolls.

UNIT-3

REGIONAL GEOGRAPHY OF THE WORLD

Concept of region and Regional Methods.
Physical features of the world-major mountains, plateau and plains types and distributions.
Major climatic regions of the world, based on Koppen's classifications.
Major river systems of the world.

Natural vegetation-types and distribution

Agriculture –influencing factors-types-shifting, intensive, extensive, plantation and mixed farming.

Industrial regions of the world-factors of industrial concentrations

Major regions-North East U.S.A

-Industrial regions of Japan

- Western Europe

- Industrial regions of China.

Population-Growth, Distribution and density, Demographic cycle.

UNIT -4

HUMAN GEOGRAPHY

Definition-field and importance,

Relationship of Human Geography with History, Economics and Anthropology

Development of Human Geography- Environmental determinism –possibilism.

Culture-Cultural factors-race and religion

Human Migration-causes, types, consequences.

Global distribution of Primitive tribes

Settlements-types, rural and urban settlements location and types.

Concept of state and nation

Frontiers, boundaries and buffer zones

Geo-Strategic theories-Heartland and Rim land theories

UNIT-5

GEOGRAPHY OF INDIA PART-I

Location, Size and Extent

Physiographic Divisions-Northern Mountains, Great Plains of Northern India

Peninsular Plateau, Coastal Plains and Islands.

Climate-Seasons, Mechanism of Monsoons, Droughts and floods

Rivers of India

Soils-Characteristics-types, distribution, soil erosion, conservation and dry land development programme.

Forest Resources-types, distribution, conservation and social forestry.

Irrigation-Development, types and distribution

Multi Purpose river valley projects

a. Bhakra Nangal d. Alamatti

Agriculture-Types, characteristics, Green revolution, White revolution.

Major Agricultural regions-NRSA Classification

UNIT-6

GEOGRAPHY OF INDIA PART-II

Human Resources	: Growth, Distribution and Density, Composition- Literacy, Sex ratio
Human resources	: Distribution, production and trade of Iron, manganese, Bauxite
power resources	: Distribution, production and trade of Coal, Petroleum, Natural gas, Electricity: Thermal Hydel and Atomic – non conventional sources Of Energy –Power crisis.
Industries	: Location, distribution and production trend of Iron steel, cotton textiles Cotton, sugar, Cement Industrial regions
transportations	: detailed study of network of Roads, NHDP, railways, Airways
Trade	: International- Volume direction and composition of Foreign trade- Recent trends
Tourism	: Development influencing factors, types major tourist centers.

UNIT-7

MAP PROJECTIONS

Maps-Meaning-classification-Atlas, wall Maps, Topographical, Cadastral Maps, Physical and cultural maps.

Scales: Meaning, significance, types, statement-RF, Conversion of scales, Graphical scale, Linear and Diagonal scales with illustrations.

Enlargement and reduction of maps, square and triangular methods.

Latitudes, longitudes and international dateline.

Computation of local, standard and Greenwich time.

Definition, Classification and Importance

Cylindrical Projections- a. Simple Cylindrical

b. Cylindrical equal area

c. Mercator's Projection

Conical Projections-

a. Simple conical projection

b. Conical Projection with two standard parallels

c. Bonne's projection

d. Polyconic Projection

Zenithal Projections-Equi-distant, equal-area, Gnomonic, stereographic, orthographic.

Conventional Projections- Sinu soidal Projection, Mollweids Projection

Choice of Projections.

UNIT-8

CARTOGRAMS AND INTERPRETATION OF INDIAN DAILY WEATHER REPORT AND INTERPRETATION OF INDIAN TOPOGRAPHICAL MAPS

Methods of Representing relief features

Hachure, Bench Mark, form lines, Spot height, trigonometrically stations, Contour.

Drawing of contour Diagrams to represent the following features

Slopes-Uniform, Undulating, Concave and Convex, Conical hill, Plateau, Ridges, Mountain pass, spur, escarpment, V Shaped valley, rapids and water fall, island, and U shaped valley and Hanging valley.

Meteorological instruments: Thermometers ($^{\circ}\text{C}$ & $^{\circ}\text{F}$)

Maximum and minimum

Wet and dry bulb thermometer

Barometer-Mercury Barometer

Aneroid Barometer

Wind Vane, Anemometer

Rain Gauge- dial type.

Cartograms- Significance and types

Line graphs- Polygraph, climograph, Hythergraph, Ergograph

Bar Graph-Multiple Bar graph and Compound Bargraph

Thematic mapping-Choro Schematic Choro Chromotic, Isopleth, Choropleth,

Interpretation of Indian Daily Weather reports-

Importance of topographical maps-Types of topographical maps based on scale.

Conventional signs and marginal information of toposheets.

Interpretation of topos sheets pertaining to

a) Plateau b) Mountain or plain

The topo sheets are required to be interpreted under the following heads

Physical landscape—a) Relief features

b) Drainage System

c) Natural Vegetation and land use

Cultural land scape-settlements and Transportation network.

UNIT-9

ELEMENTS OF SURVEYING AND GIS

Elements of surveying – Chain Surveying,

Plane table surveying- radiation and intersection, Prismatic

Compass-radiation and intersection

GIS meaning- Components of GIS, Spatial data entities- Point, Line, Polygon,

Sources of spatial data

Census- Topographical maps, Aerial photographs, satellite images

Spatial data structure and management

Vector data structure
Raster data structure
Creating database
MapInfo software-Creating maps
Digitization, Creating attribute databases.
Layers- Creating thematic maps

Methods of data collection - Primary and Secondary sources, Census and Sampling methods

UNIT-10

APPLICATION OF STATISTICAL METHODS IN GEOGRAPHY

Measures of Central tendency – direct and short cut methods

- a) Arithmetic mean
- b) Mean
- c) Mode(grouping and formula)

Measures of dispersion - mean, quartile and standard deviations