

Department of Geography  
Jamia Millia Islamia  
Syllabus for Entrance Test

**PG Diploma in Remote Sensing and GIS Applications**

Interior of the Earth; Seismic Evidence; Geological Time Scale; Origin of Continents and Ocean Basins : Wegner's Theory of Continental Drift, Plate Tectonics; Forces of the Earth's Crust & Earth Movements; Folds and Faults; Volcanoes and Earthquakes; Rocks; Major Landforms; Weathering and Mass Wasting; Normal Cycle of Erosion; Types of Streams, Drainage Pattern, Evolution of Landscape : Fluvial, Glacial, Aeolian, Coastal, and Karst

Elements of Weather and Climate; Composition and Structure of Atmosphere; Insolation and Heat Budget; Temperature; Pressure and Winds; Humidity; Condensation and Precipitation: Forms of Precipitation and Types of Rainfall, World Patterns of Rainfall; Air Masses and Fronts; Cyclones and Anti-cyclones; Koppen's Classification of Climates.

Surface Configuration of the Ocean Floor; Sub-marine Relief of Atlantic and Indian Oceans; Temperature and Salinity; Tides and Currents; Ocean Deposits.

World Patterns of Growth, Distribution and Density of Population; Determinants of Population Distribution; Human Migration: Past and Present; Population Problems of Developed and Developing Societies; Patterns of Urbanization in the World.

India: Structure; Physiographic Divisions; Drainage System; Climate, Origin and Mechanism of Indian Monsoon; Seasons of India; Classification of Climate; Soils; Natural Vegetation. Trend and Pattern of Population Growth and Distribution; Demographic Attributes: Literacy, Age and Sex, Occupational Structure, Religious and Linguistic Composition; Patterns of Urbanization in India; Population Problems and Policies. Green Revolution and Problems of Indian Agriculture, Industrial Regions of India (SEZs); Transport Networks, Internal and Foreign Trade.

Man in the Eco-system; Bio-climatic regions of the World : Environmental Crisis: Nature and Management of Deforestation, Desertification, Floods and Droughts, Soil Erosion and Land Degradation; Water Pollution; Conservation of Biodiversity; Global Warming; Population Explosion, Food Security and Sustainable Development.

Region: Concept, Types, Forms and Functions; Concept of Spatial and Sectoral Development; Planning: Concept, Levels, Types, Need and Scope; Delineation of regions Regional Development: Concepts, Indicators and Levels; Regional Planning: Concept, Purpose and Approaches; Levels of Regional Planning; Local, Regional and National. Planning in India: Five year Plans; Problem Regions: Drought and Flood Affected Areas.

Maps : Definition and Classification; Map Projections, Concepts and types of datum, coordinate systems, Methods of Relief Representation, Contours and their Profiles; Determination of Slope and Gradient; Topographic Sheets. Statistical Methods: Measures of Central Tendency – Measures of Dispersion, Co-efficient of variation, Measures of association, Regression. Qualitative and Quantitative areal distribution maps, Age and Sex Pyramid,

Types and Geometry of Aerial Photograph, Definition, type's scope and principles of remote sensing; Stages in remote sensing data acquisition; Electromagnetic radiation and electromagnetic spectrum, Remote sensing platforms and orbits; Types & characteristics of sensors: IRS, LANDSAT, SPOT, IKONOS, Quick Bird; Remote sensing data products, Elements of Image interpretation; Methods and techniques of image interpretation. History, development and component of GIS, Sources of spatial and non spatial data, GIS Data models, concept of overlay, proximity and buffer analysis, DEM, GPS: Types, Control Segment, Space Segments and User Segment, important global and regional systems: NAVSTAR, GLONASS, Indian Regional Navigational Satellite System (IRNSS), GAGAN