

ALIGARH MUSLIM UNIVERSITY, ALIGARH

FACULTY OF SCIENCE

SYLLABUS FOR

M.A. / M.SC. GEOGRAPHY

The objective (Multiple Choice) As well as short answer types questions will be asked covering the following courses taught at Graduation and Post Graduation level.

Solar System; Theories of the Origin of the Earth; Big Bang Theory; Earth Movements: Endogenetic and Exogenetic Forces; The Constitution of the Earth's Interior; Isostasy; Earthquakes and Volcanoes; Continental Drift Theory and Plate Tectonics; Theories of Mountain Building; Kober and Holmes; The Erosional and Depositional Work of Running Water, Glacier and Wind; Karst Topography; Concept of Cycle of Erosion. Davis and Penck; Rocks.

Elements of Weather and Climate; Composition and Structure of the Atmosphere; Insolation and Heat Budget; Horizontal and Vertical Distribution of Temperature; Atmospheric Pressure and Wind Circulation; Forms of Precipitation and Types of Rainfall; Classification and Properties of Air Masses and Fronts; Tropical and Temperate Cyclones; Anti-Cyclone; Koppen's Climatic Classification; Ocean Bottom Topography; Relief Features of the Ocean Floor; Pacific, Atlantic and Indian Ocean; Vertical and Horizontal Distribution of Salinity and Temperature; Tides and Ocean Currents; Ocean Deposits and Marine Resources; Coral Reefs and Coral Bleaching; Sea Level Change.

Environment: Concept, Components and types of Environments; Man-Environment Relationship; Biosphere; Ecosystems; Food Chain and Food Web; Ecological Pyramid; Bio -Geochemical `Cycles: Nitrogen cycle, Carbon cycle and Hydrological cycle; Biodiversity: Concept, Type`s and importance; Physical and Human Environment in Equatorial, Monsoon, Hot Desert, Tropical and Temperature Grasslands, Mediterranean, Tundra and Taiga Regions; Pollution: Air, Water and Noise Pollution; Soils and Natural Vegetation; Science of Climate Change: Understanding Climate Change and its causes; Green House Gases and Global Warming; Climate Change perspectives, Impact of Climate Change: Climate Change and vulnerability. Sustainable Development: Meaning and Concepts, issues in sustainability.

World Population- Distribution, Density and Growth; Theory of Population Growth; Migration; Literacy.; Concept of Optimum, Over and Under Population; Population Resource Regions of the World; Growth and Distribution of Major Indigenous People of the World; Human Settlements: Types and patterns.

Geo-Politics and Political Geography; Hortshorn's Functional, Concept of State and Nation; Boundary and Frontier; Global Strategies Models: Heartland and Rim Land Model; Geography of Election.

Disasters- Definition and Concepts; Hazards, Risk and Vulnerability; Classification. Natural and Man-made disasters and their occurrence.

Concept of Regions: Regional Planning and Development; Theories of Regional Development; World Regional Disparities; Distribution and Characteristics of Primary, Secondary and Tertiary Activities; Von Thunen Theory of Agriculture Location; Whittlesey's classification and its relevance; Soil Formation and Soil Types; Types of Forest and Forest Products; Water Conservation and Future Prospects; Production and Distribution of Wheat, Rice, Cotton, Sugarcane and Tea; Production and Distribution of Iron Ore, Copper, Coal, Petroleum and Hydro-Power; Solar Energy, Tidal Energy; Production and Distribution of Industries - Iron and Steel, Cotton Textile and Sugar; Theories of Industrial Location. Economic development: Christaller, Losch, Rostow, Smith models.

Contribution of Strabo, Ptolemy, Al-Biruni, Ibn-Khaldun, Humboldt, Ritter, Ratzel and Vidal- De-La-Blache; Environmental Determinism, Possibilism and Stop and Go Determinism; Human-environment relationship, Quantitative Revolution, Behavioural Geography, Radical Geography and Welfare Geography.

Geography of India: Structure and Relief; Evolution of Extra-Peninsular Drainage and Its Major River System; Characteristics of Peninsular Drainage and - its Major River System; Origin and Development of Monsoon and its Mechanism; Identification of Flood Prone areas and Draught Prone areas; Types of Forests and its Distribution, Characteristics and Economic importance, Deforestation and its Consequences, Social Forestry and its Significance, Distribution and Characteristics of Soils in India; Soil Erosion and Conservation; Natural Vegetation, Distribution and Growth of Population; Languages; Major Tribes; Agro-Climate Regions; The Green Revolution; Recent agricultural developments, Distribution and Production of Rice, Wheat, Cotton and Tea; Production and Distribution of Coal, Petroleum, Hydro-Electricity and Nuclear Energy; Localization Factors and Spatial Pattern of Major Industries - Iron and Steel Industry and Cotton Textile Industry.

Nature and Sources of Geographic Data; Classification and Significance of Maps; Definition, Significance and Types of Scale; Methods of Showing Relief; Representation of Population, Agricultural and Transport Data by Various Cartographic Techniques including Choropleth and Isopleth; Classification, Identification, Transformation and Choice of Map Projections; Measures of Central Tendency and Dispersion - Arithmetic Mean, Median, Mode, Standard Deviation, Coefficient of Variation; Statistics and Statistical Data: Spatial and non-spatial; indices of inequality (Range, Lorenz curve, Coefficient of variation, Gini's Coefficient). Chi-square test, Normal distribution and characteristics of normal curve. Types and utility of Aerial Photographs, Chief Elements of Aerial Photo Interpretation; Image Processing; Basics of Remote Sensing Application of Remote Sensing in Geographical Studies; Remote Sensing Platform and Sensors; Resolution and Types; GIS Database; Functions and Component of GIS; GIS Applications; GPS. Field Techniques; Observation (Participant / Non-Participant), Questionnaires, Interviews, Space Survey.