

Dr. Babasaheb Ambedkar Marathwada University, Aurangabad

Subject: Geography

Ph.D. Entrance Test 2020

Syllabus of Paper II

Sr. No.	Name of the Unit	Detailing
Section A: Research Applications, Methodology, Tools and Techniques		
1.	Unit I Cartographic Techniques and SOI	<ul style="list-style-type: none">• Cartographic Techniques: Map scale and their types, conversion of scale and map elements. Enlargement and Reduction of Map.• SOI: Indexing, conventional signs and symbols, marginal information, Grid References, Contours, slope, Drainage Patterns.
2.	Unit II Statistical Geography	<ul style="list-style-type: none">• Type of Geographical Data• Central tendency & Measures of Dispersions: Analytical methods (Mean, Median, Variance, Mode, and Standard Deviation• Skewness and Kurtosis• Concept of probability (Methods of Determination)• Time Series Analysis• Correlation and Regression• Testing of Hypothesis (Parametric and Non-Parametric Tests)
3.	Unit III Surveying and Map Projections	<ul style="list-style-type: none">• Geodetic Surveying (Triangulation, Benchmarks, Spot Heights, Reduced Levels, Interpolation, Contouring)• Survey Instruments (Plane Table, Prismatic Compass, Abney Level)• Fundamental Concepts of Map Projection• Polyconic Projection• International Map Projection (Modified Polyconic)• Universal Transvers Mercator's (UTM) Projection• Mollweide Projection
4	Unit IV Remote Sensing And Geographic Information System (GIS)	<ul style="list-style-type: none">• Basic Concepts: spectrum, spectral quantities, EMR, Laws of Radiation, Concept of Blackbody, radiation, Transmission, Absorption, Scattering, Surface, Atmosphere Windows• Basics of Ariel Photography, Basics of Satellite Remote Sensing• Elements of GIS• GIS Softwares• Data Models (Spatial and Non-Spatial)• Digitization and Editing

		<ul style="list-style-type: none"> • Data Analysis (Attribute and Spatial Database)
5	Unit V Geographical Positioning System (GPS) And Computer Applications	<ul style="list-style-type: none"> • Elements of GPS and GPS Coordinates • Fundamental Concepts (Space Segment, Control Segment and User Segments) • Components and Types of Receiver • GPS Signals • Basics of Computer (Input and Output Devices) • Map and figures Making Tools and Functions • Application of Excel (Microsoft Office): Data Analysis and Graphical Representation.
Section B: Core Subjects		
6	Unit I	
	Geomorphology	<ul style="list-style-type: none"> • Geomorphic Scale • Tectonism and Concerned theories • Weathering and Mass Movement • Work of River, Glacier, Wind & Sea Waves and Tides (Coastal Process). • Slope Morphology
	Climatology	<ul style="list-style-type: none"> • The Earth's Atmosphere (Composition and Structure) • Insolation and Heat Balance • Temperature, Air Pressure and Wind • Humidity, Air Masses and Fronts • Circulation of Atmosphere (with basic theories) • Cyclone
	Oceanography	<ul style="list-style-type: none"> • Relief of the Ocean Bottom (Floor): Basic Concepts • Properties of Sea water • Waves, Tides and Tidal Currents and Ocean Currents
7	Unit II	
	Population Geography	<ul style="list-style-type: none"> • Basic Concepts: Population Growth, Distribution, Size, Density, Fertility, Crude Birth Rate, Birth Rate, Death Rate, , Mortality, Infant Mortality, Malnutrition, Sex Ratio, Age-Sex Pyramid, Literacy, Aging Population, Dependency Ratio, Migration • Theories of Population Growth (Thomas Malthus) • Demographic Transition Model
	Economic Geography	<ul style="list-style-type: none"> • Location Activities (Von Thunen) • Spatial and Temporal Aspects of Economic Development (Rostow's and Myrdal's Models) • International Trade and Structure (Ricardo's Classical Theory)

		<ul style="list-style-type: none"> • Industrialization, Privatization, and Globalization. • Revolutions: Green, White and Blue
	Agricultural Geography	<ul style="list-style-type: none"> • Determinants of Agricultural Patterns and Agricultural types. • Agro-Climatic zones • Irrigation, Droughts and Famines • Crop Combination methods (Weaver's Method and Bhatia's Method)
8	Unit III	
	Geographical Thoughts	<ul style="list-style-type: none"> • Basic Concepts: Determinism, Possibilism, Neo-Determinism, Doctrine of Facts, Logical Positivism and Behaviouralism • Humanistics Geography • Contribution of Geographers in Ancient, Medieval and Modern Period.
	Soil Geography	<ul style="list-style-type: none"> • Soil formation and its factors • Properties of Soils (Physical and Chemical) • Concepts: Fertility, Productivity, Suitability, Floral and Faunal Organic Matter, Humus, Soil Biomass, Soil Profile, Land Capability, Salinization, Acidification, Soil Fertility, decline. Soil Deforestation, Overgrazing
	Environmental Geography	<ul style="list-style-type: none"> • Ecosystem, Food Chain and Food Web, Energy Transfer, Energy Pyramid, Biogeochemical Cycles (Nitrogen, Carbon dioxide and Oxygen) • Environmental Pollution • Environmental Legislations (Laws and Acts)
9	Unit IV	
	Settlement Geography	<ul style="list-style-type: none"> • Patterns of Settlement (Neolithic to Contemporary Period) • Dispersion and Nucleation of Settlement • Nodality, Centrality, Range, Threshold, Hierarchy and Rank size distribution • Settlement Theory: Christaller's Central Place Theory
	Urban Geography	<ul style="list-style-type: none"> • Concepts: CBD, Rural Urban Fringe, Suburbanization, Urbanization, Conurbation and Megalopolis and satellite towns • Urban Morphology: Park and Burgess Model, Homer Hoyer Model, Harris and Ullman Model. • Functional classification
	Industrial Geography	<ul style="list-style-type: none"> • Locational Factors • Centralization and Decentralization of Industries • Industries and Industrial linkages • Industrial Theory : Growth Pole Model, Greenhunt's and Israd's Model • IT Industries

	Trade and Transport Geography	<ul style="list-style-type: none"> • Concept of Trade, Types of Trade and Balance of Trade • Modes of Transportation, Measurement of Accessibility • Trade Theories: Theory of Comparative Advantage, Neo-Classical Theory, Modern Theory
10	Unit V	
	Social and Cultural Geography	<ul style="list-style-type: none"> • Bases and concepts: Positivism, Humanism, Idealism, Phenomenalism, Existentialism, Structuralism and Radicalism • Cultural Indicators • Social wellbeing, HD and HRD Index • Social Justice, Equality and Welfare
	Natural and Manmade Hazards/Disasters	<ul style="list-style-type: none"> • Concepts: Hazard, Disaster, Risk, Vulnerability • Natural Hazards: Geological, Geomorphic and Climatic, • Manmade Hazards: Physical, Chemical and Biological
	Political Geography	<ul style="list-style-type: none"> • Boundaries, Frontiers, Nation, State and Nation and State • Whittlesay's Landscape Approach, Unified Field Theory • Global Geo-Strategic Views of Mackinder, Spykman and Cohen • SAARC Organization

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Geomorphology

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Climatology

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Oceanography

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Population Geography

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Economic Geography

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Surveying and Map Projections

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Remote Sensing and Geographic Information System (GIS)

and

Global Navigation System (GPS) and Computer Applications


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