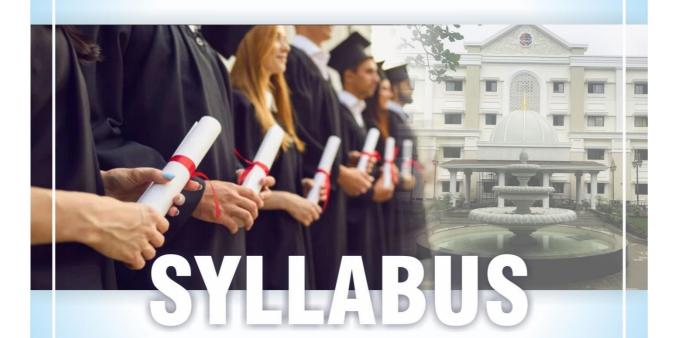


# JSPM UNIVERSITY PUNE





**Research Program Entrance Test** 

# Subject Concerned Syllabus Geography

# **Unit-I: General Geography:**

#### 1. Geographical Thought:

- Contribution of Greeks and Romans to physical and mathematical geography
- Classical period of modern geographical thought
- Dualism in geography
- Radicalism
- Models
- Behaviouralism in geography
- Quantitative revolution

#### 2. Cartography, GIS and Remote Sensingand Surveying:

- Map projections, types of maps; digital cartography
- Basics of GIS and remote sensing
- Surveying and leveling, types of survey, theodolite and dumpy level survey
- Introduction to GPS, d GPS and total station

# 3. Regional Planning:

- Evolution, nature and scope of regional planning
- Regional concept in geography
- Concepts of planning regions
- Types of regions
- Methods of regional delineation
- · Regional planning in India
- Indicators of development
- Regional imbalance

#### 4. Political Geography:

- Concept of State, Nation, Nation-state
- Heartland and Rimland theories
- Boundaries and frontiers

#### 5. Statistical Methods:

- Types of scale
- Frequency distribution, measures of central tendency
- Measures of dispersion and concentration
- Lorenz curve
- Simple and multiple correlation and regression
- Nearest- neighbor analysis

- Rank score
- Weighted score
- Principal Component Analysis (PCA)
- Trend Surface Analysis (TSA)
- Factor Analysis (FA)

# **Unit – II: Geomorphology:**

#### 1. Fundamentals:

- Basic concepts and paradigms in geomorphology
- Branches of geomorphology
- Approaches and models in geomorphology
- Geological time scale

# 2. Interior of the Earth, Deformation and Tectonics:

- Physico-chemical and seismic properties of earth's interior
- Behavior of rocks under stress folds and faults
- Earthquakes
- Paleomagnetism
- Sea floor spreading and plate tectonics

#### 3. Processes and Landforms:

- Weathering and its types
- Formation of soil
- Hillslope processes
- Fluvial, coastal, glacial, aeolinand karst processes and landforms

#### 4. Techniques in Geomorphology:

- Geomorphological mapping
- Field techniques
- Geomorphometry
- Terrain analysis
- Sediment analysis
- Geostatistical methods

#### 5. Environmental Change and Hazards:

- Landscape evolution
- Role of lithology, climate, tectonics and base level
- Significance of Quaternary period in geomorphology, Ice Age
- Role of human activities
- Natural hazards

#### **Unit – III: Climatology:**

#### 1. Fundamentals:

- Development of modern climatology and tropical climatology
- Climatic changes: natural and anthropogenic causes
- Earth's atmosphere: evolution, structureand chemical composition

#### 2. Solar and terrestrial radiation:

- Electromagnetic spectrum
- Insolation: factorsaffecting insolation, latitudinal and seasonal variations
- Effect of atmosphere, greenhouse effect and heat budget
- Temperature measurements and controls, lapse rate and inversion of temperature

# 3. Atmospheric pressure and winds, cyclones and anticyclones:

- Pressure measurement and distribution
- Wind observation and measurement, factors affecting wind, geostrophic wind andgradient wind
- Circulation of the atmosphere: scales of atmospheric motion, global circulation:single and three cell model, local winds, Jet Stream
- Tropical and extra-tropical cyclones: their life cycle. Anticylcones
- Monsoons, meteorological teleconnections, El-Niño Southern Oscillation

# 4. Moisture and atmospheric stability, air masses and fronts:

- Humidity: absolute humidity, relative humidity, mixing ratio, dew point
- Adiabatic temperature changes, stable and unstable atmosphere
- Forms of condensation and precipitation, hydrological cycle
- Air mass classification and modification
- Types of fronts and frontal weather

#### 5. Climatological Methods:

- Climatic classifications: Thornthwaite's and Koppen'sclassification
- Types and methods of weather forecasting
- Delineation of urban heat island (UHI)
- Heat and cold wave analysis

#### **Unit -IV: Population and Settlement Geography:**

#### 1. Population Geography:

Concepts of population geography

- Approaches to the study of population geography
- Demographic transition model
- Pre-Malthusian and post-Malthusian theories
- Issues and problems of population in developed and developing countries
- Recent trends in population geography

#### 2. Urban Geography:

- Concepts in urban geography- urban hinterland, conurbation, megalopolis
- Suburbanization, rural-urban divide
- Gentrification
- Urban renewal
- Urbanization curve
- Morphological models in urban geography
- Central place theory
- Problems of urbanization in developed and developing countries and recent trends in urban geography

### 3. Rural Geography:

- Distribution of rural settlement, size and spacing of rural settlement
- Land holdings and land tenure system
- Concentration and dispersion of rural settlements
- Challenges and problems in rural India
- Recent trends in rural geography

#### **Unit- V: Economic Geography:**

#### 1. Economic Geography:

- Approaches to the study of economic geography
- Evolution of world economy
- Concepts of economic system and economic landscape

#### 2. Agricultural Geography:

- Factors influencing agricultural patterns- physical and non-physical determinants
- Agricultural systems of the world
- Agricultural regionalization : crop combination, crop intensity, crop diversification and crop concentration
- Land use survey and land classification
- Aspects of food security and world pattern of hunger

#### 3. Geography of Tourism:

Concepts of tourism products

- Planning for tourism development
- Economic, social, physical and cultural impacts of tourism

# 4. Geography of Development:

- Concept of sustainable development
- Indices of human development
- Theories of development

# 5. Trade and Transport Geography:

- Modes and cost of transport
- Types of transportation, transport network and its measurement
- Characteristics of international trade, different trade theories

# 6. Industrial Geography:

- Models of industrial location :Weber and Losch models
- Industrial regions of India