JSPM UNIVERSITY
न हि ज्ञानेन सदृशं

JSPM UNIVERSITY PUNE

SYLLABUS

RPET 2023

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 andinversion 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 trendsin 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 diversificationand 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