

**PG DEPARTMENT OF GEOGRAPHY**  
**M.A. GEOGRAPHY SYLLABUS**

**CHOICE BASED CREDIT SYSTEM (CBCS)**

**S.C.S. (A) College, Puri**



**Academic Session**

**2016-18**

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**CBCS – M.A. GEOGRAPHY SYLLABUS**

## SEMESTER – I

500 marks, Credits 20

### GEOG 1: CORE – I

#### GEOMORPHOLOGY

100 marks, Credits 04

- UNIT – I:** Fundamental Concepts and their recent changes. Morphological evolutionary concept of Davis, Penck and King.
- UNIT – II:** Concept of Isostasy given by Airy, Pratt and Heiskanen. Continental Drift and related evidences. Ocean floor spreading and Plate tectonics. Earth movements. Geosynclines and theories of Mountain building.
- UNIT – III:** Weathering, Erosion and Mass Wasting-Types, Factors, Causes and Processes. Slope Profile, Slope Analysis, Development of Slopes.
- UNIT – IV:** Geological - action of Running Water, Morphometric Analysis of Drainage Basins: (1) Stream Order (2) Stream Length (3) Basin Area (4) Drainage Density (5) Laws of Morphometric Analysis (Horton & Strahler), Concept of coastal zone and coastal agents and processes, Waves, Tides and associated landforms, Coastal Erosion.
- UNIT – V:** Action of wind, Underground Water, Glacier. Processes and Landforms created by Periglacial Erosion.

#### Suggested Readings:

1. Chorley, R. J (1972) - *Spatial Analysis in Geomorphology*, Meuthen London.
2. Dayal, P. (1992) - *Geomorphology*, Shukla Book Depot, Patna
3. Holmes, A. (1989) - *Principles of Geomorphology*, ELBS, London
4. Small, R.J (1970) - *The Study of Landforms*, Cambridge University Press.
5. Steers, J.A(1979) - *The Unstable Earth*, Kalyani Publishers, Ludhiana
6. Stoddart, D. R. (ed.) (1996) - *Process and Form in Geomorphology*. Routledge, New York.
7. Strahler, A. N(1975) - *Physical Geography*, Wiley Int Edition, New York.
8. Strahler & Strahler - *Modern Physical Geography*, Wiley Int Edition, New York.
9. Skinner, B. J. & Potter, S. C. (1995) - *The Dynamic Earth*, John Wiley, New York.
10. Sparks, B. W. (1960) - *Geomorphology*, Longman, London.
11. Sharma, H. S.(eds)(1980) - *Perspective in Geomorphology*. Concept, New Delhi.
12. Singh, S. (1998) - *Physical Geography*, Prayag Publication, Allahabad.
13. Thorn bury, W. D. (1960) - *Principles of Geomorphology*, John Wiley, New York.

### GEOG I: CORE – II ECONOMIC GEOGRAPHY

100 marks, credits 04

- UNIT – I:** Fundamental concepts of Economic Geography, Economic Geography - Definition, Scope, Concept and Method, Concept of Economy, Classification of Economy, Economic Development.
- UNIT – II:** Location of Economic Activity-Agricultural Location theory of Von Thunen, Location of Secondary Activity - Industrial Location Theory of A.Weber and

E. Hoover, Location of Tertiary Activity - Contribution of Walter Christaller and August Losch.

**UNIT – III:** Definition of resource, Dynamic concept of Resource; Types of Resources (Natural, Human, Cultural); Classification of Resources - Biotic & Abiotic, Exhaustible & Inexhaustible, Potential & Developed, Agricultural & Pastoral, Mineral & Energy Resources; Resource utilization - Patterns and problems.

**UNIT – IV:** Resource Scarcity Hypothesis, Resource Conservation & Management, Sustainable Resource Management.

**UNIT – V:** Principles of Areal Functional Organisation, Agricultural Regions of the world; Industrial regions of the world.

**Suggested Reading:**

1. Beningsons & Von Raoyan (1971) - *Fundamentals of Economic Geography*, Prentice Hall of India, New Delhi.
2. Alexander, J.W.(1963) - *Economic Geography*, Prentice Hall Inc, USA
3. Fryer, D.W. - *World Economic Development*, Mc Graw Hill Books.
4. Jones, F.F. & Darkenward, G.C.(1967) - *Economic Geography*, Mc Millon, London.
5. Isard, W.(1972) - *Location & Space Economy: A general Theory relating to Industrial Location, Market Areas, Landuse, Trade and Urban Structure*, MIT Press, London.
6. Roopke (1967) - *Readings in Economic Geography*, John Willey, New York.
7. Chorley& Hagget - *Models in Geography*.
8. Hussain,M.- *Models in Geography*.
9. Smith,D.M.(1961) - *Industrial Location - An Economic Geographical Analysis*. John Wiley & Sons, London.
10. Smith, G.H.(eds)(1969): *Conservation of Natural Resources*, John Wiley & Sons Inc. New York.
11. Zimmerman- *Economic Geography*.

## **GEOG I: CORE – III CLIMATOLOGY**

**100 Marks, Credits 04**

**UNIT – I:** Fundamental concepts of climatology, Metrology Insolation and Heat budget of the earth; Atmospheric Temperature-Vertical & Horizontal distribution.

**UNIT – II:** Pressure Belts and Wind Circulation, Forces controlling motion of wind, Planetary, periodic, local and Geostrophic wind, Upper air circulation, Jetstream.

**UNIT – III:** Airmass- Origin and source region Characteristics, Distribution and Modification, Atmospheric disturbances - Cyclones and Anticyclones, Tropical & temperate cyclones, Tornado, thunderstorm.

**UNIT – IV:** Climatic Classification of Koppen & Thornthwaite, Major climatic regions of the world-Equatorial, Temperate, Tropical, Polar, Mechanism of Monsoon.

**UNIT – V:** Climate Change-Evidences, causes and Theories, Impact on Environment - Global Warming, Green house gases, Ozone depletion. Weather Forecasting: Methods and Types.

**Suggested Reading:**

1. Barry, R. G. & Chrley, P. J. - *Atmosphere, Weather & Climate*.
2. Critchfield, J. H. - *General Climatology*.
3. Das, P. K. - *Monsoons*.
4. Griffith, J. F. - *Applied Climatology*.
5. Lal, D. S. - *Climatology*.
6. Lydolph, P. E. - *The Climate of the Earth*.
7. Menon, P. A. - *Our Weather*.
8. Peterson, S. *Introduction to Climatology*.
9. Trewartha, G. T. - *An Introduction to Climate*
10. *Weather Forecasting* - A NBT publication.

## **GEOG I: CORE – IV GEOGRAPHY OF INDIA**

**100 marks, Credits 04**

**UNIT – I:** Concept of Unity in Diversity. Structure and Relief: Geological Evolution, structural division, Relief and Physiographic division. Drainage System: Drainage Basin, Peninsular and Himalayan Rivers. Evolution of Himalayan rivers.

**UNIT – II:** Climate of India: Factors, seasons, rainfall distribution pattern, Climatic regions of India, Soils of India: Classification, Characteristics, Distribution, Conservation. Natural vegetation of India: Classification, Characteristics, Distribution Conservation.

**UNIT – III:** Agriculture in India: Factors, Problems and prospects. Production and distribution of major crops- Rice, Wheat, Jute, Cotton, Sugarcane, Tea, Coffee, Multi-Purpose river valley projects, Agricultural Regions of India, Agricultural Revolutions – Green, White and Blue.

**UNIT – IV:** Major mineral resources - Iron Ore, Bauxite, Manganese, Production distribution and, trade, Power resources - Conventional and Non-conventional. Industries in India: Mineral based Industries-Iron & Steel, Aluminium; Agriculture based Industries - Sugar & textile; Chemical industries - Petrochemical & fertilizer. Transport and Communication - Road, Rail and Air transport, Water transport.

**UNIT – V:** Population in India: Growth and Distribution, Fertility, Morality and Migration - Causes, types and Impacts, Urban and Rural population, Urbanisation - Determinants, trends, spatial patterns.

**Suggested Readings:**

1. Ahmed, A. - India, *A General Geography*
2. Khullar, D. R. - *India, A Comprehensive Geography*
3. Gautam, A. - *Advanced geography of India*.
4. Mamoria, C. B. - *Economic and Commercial geography of India*.

5. Sharma & Coutinho- *Economic & Commercial Geography of India*.
6. Spate, O.H.K. - *India & Pakistan*
7. Wadia, D. N. - *Geology of India*
8. Chandm M. & Puri, V. K. - *Regional Planning in India*

**GEOG I: CORE – V (P)**  
**QUANTITATIVE & STATISTICAL TECHNIQUES**

**100 marks, Credits 04**

- UNIT – I:** Geographical data, Sources of Geographical Data, Schedule, Questionnaire, Preparation of Questionnaire, Sampling, Types of Sampling, Frequency distribution, Drawing of Histogram, Frequency Polygon, Frequency Curve, Ogive.
- UNIT – II:** Measures of Central Tendency: Mean, Median, Quartiles, Mode. Measures of Dispersion: Range, Inter-quartile Range, Quartile Deviation, Mean Deviation, Standard Deviation, Co-efficient of Variation, Moving Average.
- UNIT – III:** Skewness and Kurtosis. Co-relation, Bi-variate scatter, Scatter Diagram, Co-efficient of Correlation-Spearman's Rank Correlation, Karl Pearson's Product-Moment Correlation.
- UNIT – IV:** Regression Analysis (Linear), Regression Equations and regression coefficient; Testing of Hypothesis: Student T-test, Chi-square Test, Use of SPSS for statistical analysis.
- UNIT – V:** Practical Record and Viva-Voce.

**Suggested Reading**

1. Efhance, D. N. - *Statistics*.
2. Brian, E. & Fitzgerald, P. - *Science in Geography*.
3. Gupta, S. P. - *Statistical Methods*.
4. Pal, S. K. - *Statistics for Geoscientists*.
5. Gregory, S. - *Statistical Methods and the Geographer*
6. Matthews, John, A. - *Quantitative and Statistical Approaches to Geography*.
7. SPSS Inc. - *SPSS for Windows Release 6.0 Student Version*, Prentice Hall

**SEMESTER – II**  
**(Marks 500, Credits 20)**

**GEOG2: CORE – 01**  
**HUMAN AND SETTLEMENT GEOGRAPHY**

**(100 marks Credits 04)**

- UNIT – I:** Meaning and scope of human geography-major sub-fields. Man and environment relationship, Origin and Evolution of human race, distribution of major racial groups.
- UNIT – II:** World pattern of major language and religions, cultural landscape, Major cultural realms of the world and their characteristics.
- UNIT – III:** World Population distribution, growth, Demographic transition & related demographic theory, characteristics of developed, developing and under developed countries.
- UNIT – IV:** Meaning, scope and objectives of settlement geography, Types and patterns of settlement, Origin and growth of rural settlement, Spatial characteristics of rural settlement-distribution, size, form, morphology, house type.
- UNIT – V:** Origin and growth of urban settlement, morphology, function and functional classification-Quantitative and Qualitative. Urban land use pattern, Urban sprawl and land use theory.

**Suggested Readings:**

1. Ghose, S. *Introduction to Settlement Geography*.
2. Negi, B.S., *Human Geography*
3. Forde, C.D., Habitat, *Economy and Society*
4. Johnston, R.J., et al (eds) *The Dictionary of Geography*
5. Perpillou, A.V. *Human Geography*
6. Wagner, P.L. & Mikesell, M.W., *Readings in Cultural Geography*

**GEOG2: CORE – II**  
**OCEANOGRAPHY**

**100 Marks Credits 04**

- UNIT – I:** Meaning, Nature and Scope of Oceanography, Morphology of ocean bottom, bottom topography of Indian, Pacific and Atlantic.
- UNIT – II:** Composition of sea water, density, salinity and its distribution, Temperature of sea water, Water mass, Types of water mass, T-S diagram.
- Waves-Wind generated waves in the ocean, their characteristics, shallow and deep water waves, transitional wave, wave breakers and types, Wave transformation (surf, destructive, constructive, reflection, refraction, and deflection)
- UNIT – III:** Ocean deposits-Types and sources, distribution. Estuaries-classification and nomenclature, estuarine circulation, tides in estuaries, sedimentation in

estuaries and salinity intrusion. Sea level processes and sea level changes, causes and consequences of sea level change,

**UNIT – IV:** Ocean Current-causes and characteristics, types, theories, oceanic current's in Pacific, Atlantic and Indian, Tide- Tide producing forces and their magnitude, Coastal pollution, mixing and disposal of pollutants in estuaries and near shore areas.

**UNIT – V:** Human impact on marine communities, Impact of climate change on marine bio-diversity, Physical and chemical factors affecting marine life, Coastal marine communities, coral reefs and mangrove communities, Marine resource-energy and food, Integrated Coastal Zone Management.

**Suggested Readings:**

1. Basu, S. K. (2003): *Handbook of Oceanography*. Global vision, Delhi.
2. Bird, E. (2000): *Coastal Geomorphology-an introduction*, John Wiley & Sons.
3. Davis, R.A. (1972): *Oceanography*. Addition Wesley publishing Company.
4. Garrison, R.M. (1999): *Oceanography*, Brooks/Cole Wordsworth, New York.
5. Grant, G.M. (1982): *Oceanography*, Prentice Hall Inc, New Jersey.
6. King, C.A. M. (1962): *Oceanography for Geographers*, Edward Arnold.
7. Sharma and Vatal (1962: *Oceanography for Geographers*, Chaitanya Publishing House, Allahabad
8. Tooley, M.M. & Shenan (1987); *Sea Level Change*, Basil Blackwell, oxford, U.K.

**GEOG2: CORE – III  
GEOGRAPHICAL THOUGHT**

**100 Marks Credits 04**

**UNIT – I:** Meaning, nature and scope of Geography, Geography and related disciplines. Place of geography in the world of knowledge, Geographical knowledge during ancient, medieval and modern period.

**UNIT – II:** Contribution of Humboldt, Ritter, Vidal de la Bache, Ratzel, E.C. Semple, Dualism and Dichotomy in Geography - Determinism vs. Possibilism, Systematic vs. Regional, Physical vs. Human.

**UNIT – III:** Conceptual and methodological development during the Twentieth century, Changing Paradigm in Geography, Model Building, Hypothesis, Laws and Theories in Geography.

**UNIT – IV:** Applied geography-Concept, Methods, Techniques and application in land use, urban planning and disaster management. Recent trends in Geography-Scientific method Quantitative revolution and computer application, Positivism, Humanism, Radicalism, Behaviouralism, Feminism, Ecofeminism in Geography.

**UNIT – V:** Regional Concept and regional Geography, Development of Geography during Modern and Post Modern period, Historical explanation in Geography.

**Suggested Reading:**

1. Adhikari, S. (1995): *Fundamentals of Geographical Thought*, Chaitanya Publication House, Allahabad.

2. Abler, P. Adams, J.S. & Gould, P. (1972): *Spatial Organisation; The Geographer's view of the World*, prentice Hall, London.
3. Chorley & Hagget (1968): *Models in Geography*, Methuen & Co Ltd London.
4. Dikshit, R.D. (2006): *The Art and Science of Geography*, Prentice hall of India, New Delhi.
5. Freeman, T.W. (1961): *The Makers of Modern Geography*, Hundred Years of Geography, Duckworth, London.
6. Gregory, D. (1978): *Ideology, Science and Human Geography*, London.
7. Harvey, D. (1984): *Explanations in Geography*, Arnold Heinemann, New Delhi.
8. Hussain, M. (1984): *Evolution of Geographical Thought*, Rawat Publications, New Delhi.
9. Hartshorne, R. (1959): *Perspectives on the Nature of Geography*, Chicago.
10. Peet, R. (2011): *Modern Geographical Thought*, Rawat Publications, Jaipur.

## **GEOG2: CORE – IV**

### **ENVIRONMENTAL GEOGRAPHY**

- UNIT – I:** Concept and Types of Environment, Development of Environmentalism Basic Principles of Environment, Environment and resource, Environmental Laws. Different Earth summits
- UNIT – II:** Environmental Impact Assessment-EIA concept, Process and Evaluation methods. Goals and Principles of EIA, Effects of EIA on projects: Environmental effects of Tourism development Activities, Environmental Impact of water resource development projects.
- UNIT – III:** Environmental Pollution-Types of pollution, sources of pollution, effects and control of pollution (Air, Water, Land, Noise, Nuclear).
- UNIT – IV:** Why Biological Diversity, Bio-diversity: Meaning and concept, Distribution of Bio-diversity, Species Level Bio-diversity, Landscape Level Bio-diversity, Ecosystem Level Bio-diversity, Causes of Extinction of species, Benefits of Bio-diversity, Bio-diversity conservation, Management of Bio-diversity, International agreements to conserve bio-diversity, Biotic succession.
- UNIT – V:** Global Ecological Imbalance-Approaches for balance, Sustainable Development-Concept, Definition and goal, Dimensions of sustainable development-social, economic, ecological, spatial and cultural, Programme of action for Sustainable development in Agenda 21.Sustainable Use of Natural Resources, Principles of carrying capacity and Principles of Eco-development, Obstacles to sustainable development, Strategy for sustainable living.

#### **Suggested Reading:**

1. *Environmental Impact Assessment: A Management Tool for Development Projects* (1991) – United Nations, ESCAP, New York.
2. David, Reid (1995): *Sustainable Development CAU Introductory Guide*, Earthscan Publication Ltd. London.
3. Simmons, I.G. (1993): *Interpreting Nature (cultural Constructions of Environment)*, Routledge, London & New York.
4. White, G.F. (1974) (Eds): *Natural hazards: Local, National and Global*. Oxford University Press, London.
5. Singh, (1991): *Environmental Geography*, Prayag Pustak Bhawan Allahabad.
6. Hagget, P. (1983): *Geography, A Modern Synthesis*, Harper & Row, New York.



7. Dash, M.C. (1993): *Fundamentals of Ecology*, The Tata Mc Graw Hill, New Delhi.
8. Sinha, P. C. (1998): *Encyclopedia of Disaster Management*, Anmol Publications, New Delhi.
9. Srivastava A.K. (2003): *Environment Impact Assessment*, APH Publishing Corporation, New Delhi.
10. Watts, D. (1971): *Principles of Biogeography*, Mc Graw Hill, London.
11. Wrigh, R.T. & Nobel B.J. (2002): *Environmental Science*, Prentice Hall Inc. NJ USA.
12. Gaulten, A (2010), *Environmental Geography*, Sherede Pustak Bhawan, Allhabad.
13. Goudie, A (1984), *The Nature of the Environment*, Basil Blackwell, Oxford.

## **GEOG2: CORE – 05 (P)**

### **CARTOGRAPHY**

**100 Marks Credits 04**

- UNIT – I:** Grouping Techniques & Classification of Cartographic Data, Calculation of Composite Index and representation by Choropleth Map, Drawing of Isoleth Map, Traffic Flo Cartogram.
- UNIT – II:** Representation of population distribution by Uniform and Multiple Dots, Representation of urban population by spheres, proportional circles, cubes and blockpile diagram, Pyramid diagram, Isochronic Map.
- UNIT – III:** Drawing of Graphs; Poly graph, Band graph, Climograph, Ergograph, Lorenze Curve.
- UNIT – IV:** Map Projection - Theory of Map Projection, Properties of Map Projection, Construction of Universal Transverse Mercator's Projection Conical with two Standard Parallel, Sinusoidal, Polyconic, Gall's and Molloweid's Projection.
- UNIT – V:** Practical record and Viva voce.