

# The Odisha Gazette

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## PLANNING & COORDINATION DEPARTMENT

### NOTIFICATION

The 27th August, 2015

No.10429—Estt-PM-I-24/2015/P.—In exercise of the powers conferred by the proviso to Article 309 of the Constitution of India the Governor of Odisha is pleased to make the following rules further to amend the Odisha Planning Service Rules, 1996, namely:—

1. (1) These rules shall be called the Odisha Planning Service (Recruitment and Conditions of Service) (Amendment) Rules, 2015.

(2) They shall come into force on the date of their publication in the *Odisha Gazette*.

2. In the Odisha Planning Service (Recruitment and Conditions of Service) Rules, 1996, (hereinafter referred to as the said rules) in sub-rule 2;

(i) after clause (a), [and before clause (b)], the following clause shall be inserted; namely:—

“(a-1) “Ex-servicemen” means persons as defined in the Odisha Ex-servicemen (Recruitment to State Civil Services and Posts) Rules, 1985”;

(ii) after clause (b), [and before clause (c)], the following clause shall be inserted; namely: —

“(b-1) “Persons with Disabilities (or Physically Handicapped Persons)” means persons who would have been granted disability certificate by competent authority as per the provisions under rule 4 of the Persons with Disabilities (Equal Opportunities, Protection of Right, and Full Participation) Odisha rules, 2003”;

(iii) after clause (c), [and before clause (d)], the following clause shall be inserted; namely:—

“(c-1) “SEBC” means the Socially and Educationally Backward Classes of Odisha other than the Scheduled Castes and Scheduled Tribes.

(iv) after clause (d), [and before clause (e)], the following clause shall be inserted; namely:—

“(d-1) “Sportsperson means persons who would have been issued with identity card as Sportsperson by the Director, Sports as per Resolution No.24808/Gen, dated 18th November, 1985 of General Administration Department;”.

3. In the said rules, in rule 11;

(i) sub-rule (4) shall be substituted by the following sub-rule, namely:—

“(4) Recruitment to the service shall be made as per the Scheme of Examination, Subjects and Syllabus specified in the “SCHEDULE”; and

(ii) sub-rule (5) shall be deleted.

4. In the said rules, in rule 13, the first proviso to clause (c) shall be substituted by the following proviso; namely:—

“Provided that the upper age limit in respect of reserved categories of candidates shall be relaxed in accordance with the provisions of the Act, Rules, orders or instructions, for the time being in force, for the respective categories;”.

5. In the said rules, rule 14 along with its marginal heading shall be substituted by the following rules, namely:—

14. (1) The decision of the Commission as to the eligibility of the candidate for admission to the examination shall be final and no candidate to whom a certificate of admission has not been issued by the Commission shall be admitted to the examination.

(2) the application of a candidate shall be summarily rejected if the same is not complete in all respects as per instructions to the candidate.

(3) the candidate who secure such minimum qualifying marks in the written test, as may be fixed by the Commission shall be called to appear at the personality test. Provided the number of such candidates to be called for the personality test belonging to each category, shall not be more than twice the total number of vacancies advertised.

(4) Every candidate appearing at the examination, if he is otherwise eligible shall only be permitted maximum four attempts to appear at the examination:

Provided that this shall not apply in case of S.C. and S.T. candidates; and candidates belonging to the Socially and Educationally Backward Classes who shall be permitted seven such attempts.

NOTE: Notwithstanding the disqualification or cancellation of candidature the fact of appearance of the candidate at the examination shall count as an attempt.

(5) On the basis of the results of the examination and tests conducted under rule 5, the Commission shall prepare a list of successful candidates found suitable for

appointment in order of merit, subject to reservations under different categories and forward the list to Government. The list shall also be published by the Commission for general information.

(6) The list prepared under sub-rule (5) shall include the names of successful candidates equal to the number of vacancies reported to the Commission.

(7) The list submitted by the Commission shall be valid for one year from the date of its approval by the Government:

Provided that Government may, at any time, in consultation with the Commission for grave lapse in the conduct on the part of any person included in the list remove the name of such person from the list.

NOTE : (i) Final ranking of the candidates shall be on the basis of marks obtained in the written examination and interview.

(ii) In case of candidates securing same marks in the aggregate the final ranking shall be determined on the basis of age, i.e. those elder in age shall be given preference over others.

(8) Penalty shall be imposed upon the candidate who is or has been declared by the Commission to be guilty of—

(i) Obtaining support for his candidature by any means; or

(ii) Impersonation; or

(iii) Procuring impersonation by any person; or

(iv) Submitting fabricated document or document which have been tampered with; or

(v) making statements which are incorrect or false or suppressing material information; or

(vi) Resorting to any other irregular or improper means in connection with his candidature for the examination; or

(vii) Using unfair means during the examination; or

(viii) Writing irrelevant matter including obscene language or pornographic matter in the script(s); or

(ix) Misbehaving with the fellow examinees or the invigilator in any matter in the examination hall; or

(x) Harassing or causing bodily harm to the staff employed/ engaged by the Commission for the conduct of the examination; or

(xi) Violating any of the instructions contained in the admission certificate; or

(xii) Attempting to commit or as the case may be, abetting the Commission of all or any of the acts specified in the foregoing clauses, may be liable—

(a) to be disqualified by the Commission from the examination for which he is a candidate; or

(b) to be debarred for a specified period by the Commission, from appearing in any such examination or selection held by them.

Provided that no penalty under this rule shall be imposed except after—

(i) Giving the candidate an opportunity of making such representation to the Commission in writing, as he may wish to make in that behalf; and

(ii) Taking into consideration the representation, if any, submitted by the candidate within the period allowed to him by the Commission [or the Government as the case may be].

(9) Inclusion of the name of a candidate in the list confers no right to appointment unless Government are satisfied, after such enquiry as may be considered necessary, that the candidate having regard to his character and antecedents is suitable in all the respects for appointment to the service.

**6.** In the said rules, rule 17 shall be substituted by the following rules; namely:-

“17. Notwithstanding anything contained in these rules reservation of vacancies or posts, as the case may be, for—

(a) Scheduled Castes & Scheduled Tribes shall be made in accordance with the provisions of the Odisha Reservation of Vacancies in Posts and Services (for Scheduled Castes & Scheduled Tribes) Act, 1975 and the rules made thereunder or any other law or rule in force at the relevant time; and

(b) SEBC, Women, Sportsperson, Ex-servicemen and Persons with Disabilities shall be made in accordance with the provisions made under such Act, rules, orders or instructions issued in this behalf by the Government from time to time”.

**7.** The word “Orissa” shall be substituted by the word “Odisha” wherever occur in the rule.

**8.** The “Sportsman” shall be substituted by the word “Sportsperson” wherever occur in the rules.

**9.** The words “Class-I” and “Class-II” shall be substituted by the words “Group-A” and “Group-B” respectively wherever occur in the rules.

**10.** The words “as on the 1st day of January of the year in which the advertisement is issued by the Commission” shall be added after the word “age” in rule-13 (c).

**11.** In the said rules, after rule 24, the following Schedule shall be added, namely:—

**SCHEDULE****[See sub-rule (4) of rule 11]****SCHEME OF EXAMINATION, SUBJECTS AND SYLLABI****1. SCHEME OF EXAMINATION :**

The competitive examination shall comprise as follows, namely:—

- (i) Written Test (Multiple choice questions) .... 500 marks  
(ii) Personality test or Interview .... 50 marks

**2. Subjects and Syllabi for the competitive Examination—**

The written test shall consist of 3 (three) compulsory papers and 1(one) optional paper. The subjects in which the candidates shall be tested in the examination and the maximum marks for each paper is given below:—

<b>WRITTEN TEST</b>			
<b>PAPER</b>	<b>Subject</b>	<b>Duration</b>	<b>Maximum Marks</b>
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>
<b>A.</b>	<b>Compulsory Papers :</b>		
PAPER-I	General English	2 hours	100
PAPER-II	(a) General Knowledge (Aptitude Test/ Reasoning/ Mathematics). (b) General Social Studies (Basic Concept/ knowledge on Development Economics, Geography, Sociology, Anthropology, Regional Planning and Demography).	3 hours	150
PAPER-III	Economics	2 hours	100
<b>B.</b>	<b>Optional Papers :</b>		
	Candidates shall be required to choose one subject. There shall be one paper in each subject.		
PAPER-IV	Economics/Applied Economics/ Agricultural Economics/Commerce/Mathematics/ Sociology/Anthropology/ Demography/ Geography/ Statistics/Regional Planning/ Econometrics.	3 hours	150

3. The compulsory papers shall be of Degree standard.
4. The scope of the Syllabi for optional subject papers for the examination shall be broadly the Master's Degree level and the syllabi are detailed at *Annexure-I* to XII.

By Order of the Governor

U.N. BEHERA

Development Commissioner-*cum*-  
Additional Chief Secretary and  
Secretary to Government.

**SYLLABUS FOR ASSISTANT DIRECTOR IN (GROUP-B) OF  
ODISHA PLANNING SERVICE CADRE**

**1. Paper-I ... General English**

The pattern of questions on General English will broadly include: usage & vocabulary and knowledge of Grammar.

**2. Paper-II ... General Knowledge / General Studies**

(a) This subject includes the following categories:

Aptitude Test, Quantitative Analysis, General Mental Ability, Basic numeracy (numbers and their relations, orders of magnitude), Data Interpretation (Charts, Graphs, Tables, Data Sufficiency, etc.), Decision making and problem solving.

(b) (1) Current Events of national and international importance

(2) History of India and Indian National Movement

(3) Indian Polity and Governance—Constitution, Political System, Panchayati Raj, Public Policy, Rights Issues etc.

(4) General Science

(5) Knowledge on Development Economics

(6) Geography, use of maps for planning and monitoring

(7) Social Development

(8) General Anthropology

(9) Regional Planning & Demography

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**3. Paper-III ... Economics(Compulsory)**

**Unit-1:** Nature and scope of economics, Utility analysis: ordinal and cardinal utilities, Law of demand and Elasticity of demand: meaning and measurement, Consumer equilibrium under indifference curve analysis.

The production function: Laws of returns and returns to scale, Cost and Revenue: Average and marginal cost curves, Nature of short run and long run cost curves.

**Unit-2:** Market Equilibrium: Perfect competition, Monopoly and Monopolistic Competition.

Marginal Productivity Theories of Distribution, Wage determination, wage differential and collective bargaining, Rent: scarcity rent, differential rent and quasi-rent, Keynesian theory of interest, Innovation, risk and uncertainty theories of profit.

**Unit-3:** National Income Accounting, Concepts of GNP, GDP, NDP and National Income and measurements, Other Indicators of Development: PQLI and HDI. Concept of Keynesian Multiplier, Balanced budget multiplier, Autonomous and Induced Investment and determination of Income.

**Unit-4:** Commercial banking: Functions and objectives: Credit creation and Investment policy commercial banks.

Central banking: Objectives and Functions, Role of Monetary policy, Credit control measures with special reference to Reserve Bank of India.

**Unit-5:** Role of fiscal policy, Sources of Public Revenue: Incidence and burden of Tax, Characteristics of a good tax system, Trends of tax revenue of the Central and the State Governments in India, Growth of Public expenditure in India, Public debt in India, Types of Budget, Components of budget and their implications.

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**COMMERCE**

- 1. Preparation of Financial Statement:** Final Accounts, Funds Flow Statement and Cash Flow Statement.
  - 2. Accounting issues:** Relating to Amalgamation, Absorption and Reconstruction of Companies both external and internal.
  - 3. Analysis of Financial Statements:** Horizontal, Vertical, Ratio Analysis, Common Size Statements, Comparative Statements, Trend Analysis.
  - 4. Decision making with Cost Accounting:** Cost concept, Marginal Costing, Breakeven Analysis, Budgetary Control.
  - 5. Planning:** Nature, Significance, Developing Planning Premises, Planning Exercise, SWOT Analysis
  - 6. Organizational Design:** Organizational Structure, Centralisation Vs. Decentralization of Authority, Informal Organization, Organizational Effectiveness.
  - 7. Business Statistics:** Data Collection Methods, Sampling Methods, Hypothesis Testing Procedure, Large Sample Test, 't' Test
  - 8. Financial Management:** Financial Goals, Conflict of Interest between the Stakeholders, Functions of Financial Manager, Changing Financial Environment, Computation of Cost of Equity and Cost of Debt Analysis of Operating Leverage and Financial Leverage, Capital Structure Decision and Share Holders Value Maximization, Capital Investment Decisions with time value of money.
  - 9. Security Analysis:** Characteristics of Security Investment, Primary and Secondary Market, Methods of Selling Securities in Primary Market and Secondary Market. Economic Analysis, Industry Analysis and Company Analysis.
  - 10. Marketing Practices and Marketing Strategy:** Planning and Marketing Segmentation, Marketing Research, Marketing Information System, Marketing Strategies, Rural and Agricultural Marketing, Cyber Marketing, Cooperative Marketing, Green Marketing.
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## **SOCIOLOGY**

### **Origin and Growth of Sociology :**

Emergence of Sociology as a science contributions and seminal ideas of the founding fathers: Auguste comte, Karl Marx, Emile Dukheim, Max Weber.

### **Basic Elements of Social Life :**

Norms and Values, Folkways and Mores Culture and Cultural Dynamics, Ethnocentrism and Cultural Relativism, Cultural Determinism, Cultural Traits, Diffusion, and Acculturation.

Kinship, Marriage, and Family: Rules of Descent, Lineage and Clan.

Rules of Mate Selection, Forms of Marriage: Polyandry and Polygyny, Sororate and Levirate Forms of Family, Functions of Family, Recent Changes in the Institutions of Marriage and Family Groups: Primary and Secondary, Community: Rural and Urban, Gemeinschaft and Gesellschaft Order and Change, Socialization and Social Control, Conformity and Deviance.

Social Stratification: Theories of Social Stratification, Closed and Open Systems of Stratification Collective Behaviour: Crowd Behaviour and Social Movements.

### **Religion, Polity, and Economy :**

Religious beliefs and rituals, the Sacred and the Profane Fetishism, Animism and Totemism Magic, Religion and Science; Social Functions of Religion.

Power and Authority, Bureaucracy, Elitism and Democracy—Pareto, Mosca, Michels, Karl Mannheim.

The Power Structure—C. Wright Mills, Robert Lynd, Robert Dhal

Social Relations of Economic Life, Primitive, Peasant, and Modern Economic Systems, Reciprocity, Distribution, and exchange: Contributions of Bronislaw Malinowski, Marcle Mauss, Theodore Shanin, Karl Polanyi.

Economic Behaviour, Rational Action and Capitalism

Contributions of Marx, Weber, and Talcott Parsons to the study of Economy and Society

### **Indian Social Structure and Change**

Indian Society, Unity and Diversity

The Caste System: Features and Recent Changes, Caste and Politics Great Tradition and Little Tradition.

Social Change in India: Sanskritisation, Westernisation, Secularisation, Modernisation, Globalisation and its Impact.

Status of Women

The Constitutional Provisions and the Affirmative State Actions to develop the SCs, STs, OBCs and Women Ethnicity and Cultural Identity, Civil Society and Citizenship.

**Social Disorganization and Problems :**

Theories of Social Disorganization, Anomie and Alienation Family

Disorganization, Divorce, Domestic Violence

Drug Addiction, Alcoholism

Poverty and Corruption with special reference to India

Development and Displacement

Religious Fundamentalism and Communal Violence with special reference to India.

**Research Methods for Social Planning :**

Nature of Social Phenomena, Positivist and Constructivist Approaches

Typology of Research—Basic Research, Applied Research, Policy Research, Action Research, Evaluation Research.

Problem of Objectivity in Social Research

Information needs for planning, Sources and Types of Data, Methods of Data Collection - Quantitative, Qualitative, and Participative methods.

Ethical Issues in Social Research

**Sociology of Development and Planning :**

Concepts and Approaches to Development, Growth-Oriented and Equity-Oriented Development Planning, Principles of Gandhian Planning.

Multidimensionality of Development—Physical, Social, Cultural, Economic, Political, and Ecological dimensions.

Key Actors in Development—The State, the Market, and the Civil Society Organisations

History of Five-Year Plans, Decentralized Planning and Local Development—concept, Importance and Approaches Conventional, technical top-down planning Vs. Participatory bottom-up planning Institutional Framework for integrated Development Planning, Role of PRIs, NGOs and Community Institutions Convergence of Resources and Services, Methodology for Micro Planning.

**Rural Development Planning :**

Objectives, Perspectives, and Approaches, Service Delivery Vs. Empowerment oriented approaches, basic Issues of Poverty and Sustainable Livelihoods, Natural Resources Management, Entrepreneurship development, Participation, Grass roots Democracy and Governance, Community Ownership and management, Public-Private Partnership for Assets-Based Community Development, Role of Social Capital, Community-Based organizations, Self-Help Groups, Cooperatives, and their Federations, their roles, coordination and linkages, Success stories and Best Practices, Major anti-poverty programmes of the Government.

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**MATHEMATICS**

1. **Real Analysis:** Sequences and series of functions, uniform convergence, power series, Fourier series, Functions of several variables, maxima, minima, multiple integrals, line, surface and volume integrals, Green's theorem, Gauss and Stoke's theorem. Metric spaces, completeness, Weierstrass approximation theorem, compactness, Lebesgue measure, measurable functions, Lebesgue integrals, Fatou's lemma, Dominated convergence theorem.
2. **Complex Analysis:** Analytic functions, Conformal mappings, Bilinear transformations, Complex integration, Cauchy's integral formula, Cauchy's theorem, Liouville's theorem, Maximum modulus principle, Taylor and Laurent series, Residue theorem and its application for evaluating real integrals.
3. **Linear Algebra:** Finite dimensional Vector spaces, Linear transformations and their matrix representations, Rank, System of linear equations, Eigen values and eigen vectors, minimal polynomial, Cayley Hamilton theorem, Diagonalization, Hermitian, Skew-Hermitian matrices, Finite dimensional inner product spaces, Self-adjoint and Normal operators, Quadratic forms, Reduction of quadratic forms.
4. **Algebra:** Groups, Normal subgroups and homomorphism theorems, Automorphisms, Symmetric groups, Alternating groups, Rings, Maximal Ideals, Prime Ideals, Integral domains, Euclidean domains, Principal Ideal domains, Unique Factorization domains, Fields, Sylow's theorems and their applications.
5. **Functional Analysis:** Banach spaces, Hahn-Banach theorem, Open mapping & Closed graph theorems, Principle of Uniform Boundedness, Boundedness & continuity of Linear transformations, Dual spaces, Embedding in the second dual, Hilbert spaces, orthonormal sets, Bessel's inequality, Parseval's identity, Riesz Representation theorem, Self-adjoint, Unitary & Normal linear operators on Hilbert spaces.
6. **Ordinary Differential Equations:** First order ordinary differential equations, Existence and uniqueness theorems, Linear ordinary differential equations of higher order with constant coefficients, Linear second order ordinary differential equations with variable coefficients, Methods of Laplace transforms for solving ordinary differential equations, Series solutions, Legendre and Bessel functions and their orthogonality, Sturm Liouville system, Green's functions.

7. **Partial Differential Equations:** Linear and quasilinear first order partial differential equations (PDE), method of characteristics, Second order linear equations in two variables & their classification, Solutions of Laplace, Wave, Heat equations in two variables, Fourier series and transform methods of solutions of the above equations and their applications to physical problems.
  8. **Numerical Analysis:** Numerical solution of algebraic & transcendental equations, bisection, secant method, Newton-Raphson method, Fixed point iteration, Interpolation: Lagrange, Newton, Hermite interpolations, Numerical differentiation and integration, Trapezoidal & Simpson rules, Quadrature rules, Numerical solution of system of linear equations, direct and iterative methods, Numerical solutions of ordinary differential equations, initial value problems, Taylor series methods, Runge-Kutta methods.
  9. **Mathematical Programming:** Linear programming problem & its formulation, Graphical method, Basic feasible solution, Simplex method, Big-M method & Two phase methods, Infeasible & unbounded LPP, Dual problem & Duality theorems, Dual Simplex method, sensitivity analysis & Parametric linear programming, Kuhn-Tucker conditions of optimality, Quadratic programming, Duality in quadratic programming, self duality, integer programming, transportation & assignment problems.
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## ANTHROPOLOGY

- Unit-I:** Meaning and Scope of Anthropology; Major areas of Anthropology, their scope and relevance: Social and cultural anthropology; Biological anthropology; Archaeological anthropology; Linguistic anthropology, Medical anthropology, Ecological anthropology, Palaeoanthropology, Forensic anthropology, Visual anthropology, Cognitive anthropology, Political anthropology, Population anthropology, Economic anthropology, Applied and action anthropology, Urban anthropology, Molecular anthropology. Relationship of anthropology with other branches of social and biological sciences; Natural Science ideas in anthropology, Humanistic Tradition in anthropology, Anthropology and History.
- Unit-II:** Organic Evolution: Lamarckism, Darwinism, Synthetic theory, Out of Africa vs Multi-regional theory of human origins, Paleontological evidences of Human evolution: Australopithecinae, Homo-erectus, Homo-neandertalensis, Homo-sapiens, Interdependence between biological and cultural evolution, Erect posture and bi-pedalism, Concept of Race, Race and Racism, Criteria for Racial Classifications; Distribution and Characteristics of Major races of the world: Caucasoid; Negroid; Mongoloid; Racial classification of Indian Population (Risley's, Guha's Sarkar's); Role of heredity and environment in race formation.
- Unit-III:** Geological Time Scale: An outline of the Pleistocene epoch; Glacial and Interglacial periods of Europe and India, meaning and scope of prehistoric anthropology, Relative and absolute dating, Prehistoric Technologies and Tool types of Early man: Manufacturing techniques of major Palaeolithic, Mesolithic and Neolithic tool types, Evolution of Indian culture and civilisation: Palaeolithic, Mesolithic, Neolithic, Protohistoric cultures, Ethno-archaeology in India.
- Unit-IV:** Culture and society, culture and personality, patterns of culture, features of culture, culture trait and culture complex, Culture Change: Innovation, Invention, Diffusion, Acculturation, Assimilation, Attenuation, Integration Social Institutions: marriage: types, functions and regulation; family: types. Impact of urbanisation and industrialisation on family, universality of family; Kinship: principles of descent, kinship terminology, usages, Alliance Theory;

Clan and Lineage: Types and functions; Economic organisation: Primitive and peasant economy; Reciprocity and Redistribution; Usufruct Rights; Barter; Subsistence Economy; Market Economy; Political organisation: Concept Band; Stateless Society; Segmentary Society; Primitive Government: Forms and Functions; Social Control: Forms and Agencies; Religion, Magic and Science, Theories of primitive region.

**Unit-V:** Human Genetics: Scope and Developments; Mendel's Law of Inheritance and its application to Man; Hardy-Weinberg Law and its application in human population, Patterns of inheritance of Autosomal (dominant, recessive and co-dominant) and sex-linked traits, Methods of studying human heredity: Twin method, Pedigree method and Sib-pair method; linkage and crossing over; Polygenic Inheritance in Man, Chromosomal abnormality in Man, Blood Groups; HLA; Structure and function of DNA, RNA, Recombinant DNA technology; Genetic variation and genetic disorders in human population; Application areas of biological anthropology and human genetics for the service of mankind. Human Growth and development: Stages and factors, Ageing and senescence.

**Unit-VI:** Research methods in anthropology: Inductive and deductive methods, field work tradition in anthropology, Comparative methods in anthropology, Scientific methods in anthropology; Synchronic and Diachronic Approaches in anthropology; Emic and Etic Approaches; Types of Research design, Techniques of data collection: Observation, interview, questionnaire, case study, schedule, Analysis, interpretation of data, Types of Sampling. Socio-gram, projective technique, Monitoring and Evaluation; PRA and RRA Techniques.

**Unit-VII:** Salient features of Indian society and culture, Unity and diversity, Approaches to the study of Indian society and culture, Village studies in India, Jajamani system, Caste system in India, Dominant caste, Little Tradition and Great tradition; Universalization and Parochialization; Urban Communities: Structure and Types; Cultural Role and Functions of Cities: Folk-Urban and Tribe-Caste Contrast and Continuum, Social and Cultural Change in Modern India Sanskritization, Westernization, Urbanization and Industrialization, Modernization, Peasantization, Retribalization; Social, Cultural and Psychological Barriers and Stimulants to Change.

- Unit-VIII:** Weaker Sections in India-Scheduled Tribes, Scheduled Castes, Denotified Tribes, Nomadic and Semi-Nomadic Tribes and Castes. Their population, Distribution and Classification; Religious Minorities; Problem of Minorities, Tribes and Other Backward Castes (SEBCs); Constitutional Provisions and Safeguard Measures for SCs and STs; Unresolved issues and Problems of Development of STs (Forests, Shifting Cultivation, Land Alienation, Housing, Health and Sanitation/Nutrition, Indebtedness, Bonded Labour and Child Labour, Education and Gender Issues; Problems of Displacement due to Development Schemes, Tribal Rehabilitation), Development Strategies; Policies, Plans and Programmes for Tribal Development, Role of Anthropology in tribal and rural development. Contribution of Anthropology to the understanding of regionalism, ethnic and political movement Development Planning in India, Poverty in India, Forest and Tribal's, Forest Policy in India.
- Unit-IX:** Tribal Movements in India; Mandal Commission; Dhebar Commission, Bhuria Committee Report; Regionalism and Ethnicity; New Panchayat Raj System: PESA and Grama Sabha; Role of Voluntary Organisations in Development, Population Policy in India, Population problems in India; Problems of Food security in India, Problems of Health and Nutrition in Indian population, Problems of environment degradation and pollution in India, Environment and sustainable development. Empowerment of Women in India: Issues and challenges; Environment policy in India.
- Unit-X:** Theoretical Issues in Anthropology: Evolutionism, Diffusionism, Neo-evolutionism, Functionalism, Structure functionalism, Structuralism, Cultural materialism, Social Biology, Post- modernism, Cultural Ecology, Demographic theories: Biological and socio-cultural; Anthropology and the Concept of Race;
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## GEOGRAPHY

### **UNIT-I (Physical Geography) :**

Seismic Study and Constitution of the Earth's Interior, Continental Drift Theory and Plate Tectonics, Concept of Geosynclines and Theories of mountain building and Isostasy. Forms of Valley Development: Contribution of W.M. Davis, W. Penck & L.C. King, Quantitative analysis of Erosional Landforms: Laws of Drainage Morphometry, Insolation and Heat Budget, Monsoon and Jet Stream, Atmospheric Disturbances: Tropical and Temperate Cyclones, Surface Configuration of Ocean Floor, Currents of Atlantic, Pacific and Indian Oceans.

### **UNIT-II (Human and Economic Geography) :**

Culture and Geography: Cultural realms of the World, Rural Settlement: Factors affecting settlement, Patterns of Rural settlement, Urban Settlement: Towns and Cities, The rank-size distribution of cities, The shape and structure of towns, Central Place Theories, The process of World Urbanization, Resource Utilization and Economic Development, Principles of Natural Resource Conservation. The Role of Transportation and Communication in Economic Development.

### **UNIT-III (Cartography and Statistics) :**

Earth Map Relations: Spherical, Ellipsoidal and Geoidal Earth, Geographical Coordinates, Properties of Graticule, Basic Characteristics of Maps, Map Types, Map Forms, mapping Constraints, Cartographic data Analysis: Grouping Techniques and Mapping Methods, The Cartographic Communication Process, Cartographic Parameters, The Fundamental Properties of a Map projection, Measures of Dispersion and Variability, Correlation and Regression Analysis in Geography.

### **UNIT-IV (Environmental Geography) :**

Cultural Changes and Sustainability (Agricultural Revolution, Industrial Revolution and Information/ Globalization Revolution), Poverty and Environment: Their Status, Trends and Environmental Consequences of Poverty, The Concept of Disaster and Disaster Management, The Concept of Disaster Management Cycle- Post Disaster Review Prevention, Mitigation, Preparedness, Disaster Impact, Response, Recovery, Development, **Environmental Impact Assessment:** Concept, Process and Evaluation Methods, Goals and Principles of EIA, Effects of EIA on Projects, Perennial Problems in EIA Implementation, **Social Impact Assessment:** Definition, The Steps and Guiding Principles, Methods for Preliminary and Main Phase in SIA, Problems Confronting SIA, Fundamentals Issues in SIA. Sustainable Development—Concept, Definition and Goal, Dimensions of Sustainable Development—Programme of Action for Sustainable Development in Agenda-21.



**UNIT-V (Geographic Thought) :**

Geographical Concepts in Ancient Period-Contributions by Indians, Greeks, Romans and Chinese, Medieval Period: Arabian Geography, Renaissance in Geography, Modern Period in Geography: Contributions of Humboldt, Ritter and Ratzel, Dualism and Dichotomy in Geography, Concept of Crude Determinism, Environmentalism, Neo-Determinism, Scientific Determinism, Stop and Go Determinism, Pragmatic Possibilism, The Quantitative and Theoretical Revolution in Geography, Paradigms—Testing of Hypothesis, Model Building, Diffusion of Innovation, Geography- A new Synthesis— Empirical Philosophy of Regional Geography, Scientific Explanations in Geography, Trends Towards a New Synthesis.

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## REGIONAL PLANNING

### **UNIT-I (Fundamental Concepts) :**

Concepts and Rationale of Planning, Concept of Region and Regional Planning, Planning, Planner and Plans. Planning Policy Making and Implementation. The History of Planning in the Third World, The Planning Agencies. The Professional Planner, The Planner in the Society.

### **UNIT-II (Some Theoretical Considerations) :**

Economic Growth Theories: Rostow, Dualism and Theories of Modernization, dependency models, Regional Development Theories: Hirshman, Myrdal, and Perroux. Friedman, Spatial Structure of Regions: Central Place Theory (Christaller, Losch and Galpin), Growth Pole Theory.

### **UNIT-III (Planning Procedures and Techniques) :**

Methods and techniques of Regionalization, Techniques in Preparation of Regional Plans, Choosing Planning Techniques in the Developing Countries, Appraisal Techniques, Implementation, Monitoring and Evaluation, Forecasting, modelling and plan design, The System of Rural Centres: Functions of Rural Centres and Procedures for Drawing Up a Hierarchical Rural Centre Plan.

### **UNIT-IV (The Operational and Spatial Level of Planning Activity) :**

Operational Level: Project Planning, Sectoral Planning, Integrated Area Planning, Comprehensive National Planning. Spatial Level: The Concept Decentralization and decentralization, Decentralization in Planning, The Top-Down and Bottom Up approach, The choice of Spatial planning levels.

### **UNIT-V (Regional Planning in India) :**

The efforts of Regional and Rural Development Planning in India, Spatial Structure Administrative Set-up for Regional and Rural Development Planning in India, Regional Imbalance and Regional Disparity in India, Multi-Level and Decentralized Planning in India, Development of Backward Areas, Planning for Tribal Development, Multipurpose River Basin Planning.

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**STATISTICS**

1. Statistics and its importance in planning. Descriptive statistics: Measure of central tendency, dispersion, moments, skewness and kurtosis. Linear correlation and regression analysis with applications. Multiple correlation and regression analysis. Measures of association of attributes. Time series analysis.
  2. Definition and rules of probability, Marginal, conditional and joint probability, Bayes theorem and its applications, Random variables: Discrete and continuous. Mathematical (expectations. Moment generating functions, Convergence theorems, Law of large numbers, Central limit theorem. Probability distributions: Binomial, Poisson, Geometric, Normal Uniform, Exponential, Gamma, Beta distribution.
  3. Parametric and non-parametric inference: sampling from normal population parameter and estimator. Properties of a good estimator: unbiasedness, consistency, efficiency and sufficiency. Point estimation: Cramer-Rao inequality, MVU Estimator, maximum likelihood method of estimation and its properties, interval estimation, Test of hypotheses: Null and alternative hypothesis, type I and II errors, Neyman-Pearson lemma, test of significance based on 'Z', 'T', 'F' and Chi-square. Non-parametric test: Sign test, signed rank test, median test, run test, Mann-Whitney U test.
  4. Sampling from finite populations: population, sample, sampling units/ sampling units. Census sampling and non-sampling errors, probability and non-probability sampling, sampling designs: simple random sampling WOR and WR. Method of drawing simple random sample. Determination of sample size. Stratified sampling, systematic sampling. Cluster sampling, multi-stage sampling. Estimation of population mean / total and standard error of estimates. Use of auxiliary information in sample surveys – ratio, regression and product method of estimation. Comparison of efficiency, PPS method of estimation.
  5. Design and analysis of experiments, analysis of variance models – fixed and random. Analysis of one way and two way classified data, basic principles of designs, Experimental designs—CRD, RBD and Latin square designs and their analysis. Missing plot technique, factorial experiments: analysis with and without confounding.
  6. Optimization techniques: linear programming problems; Graphical and simplex method of solutions, duality, transportation and assignment problems multivariate analysis: bivariate normal distribution and Multivariate normal distribution and their properties, test of significance based on multivariate normal population, Discriminant analysis.
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## AGRICULTURAL ECONOMICS

### 1. Micro-Economics :

Theory of Consumer Behaviour—utility approach, income effect substitution effect, indifference curve approach. Consumer surplus, derivation of demand curve, elasticity of demand, production function, theory of costs, supply, producer's surplus. Market equilibrium, perfect competition, general equilibrium theory.

### 2. Macro-Economics and Policy :

Macro-Economics-Nature and Scope, Keynesian concepts, national income—concepts and measurement, classical theory of employment, concept of multiplier and accelerator, inflation monetary policy and fiscal policy.

### 3. Agricultural Production Economics :

Nature scope and significance of agricultural production economics assumption of production functions, estimation of commonly used production function, factor-product, factor-factor and product production relationship, cost function and cost curves, return to scale, factor share, elasticity of production.

### 4. Agricultural Finance :

Role and importance of agricultural finance, financial institutions and credit flow to priority sector. Agricultural lending – direct and indirect financing. The concept of 3Rs, 3Cs and 7Ps of credit, estimation of technical feasibility. Economic viability repaying capacity and risk bearing ability of the borrowers, balance sheet, cash flow statement and profit and loss, account, ration analysis, crop insurance programme.

### 5. Natural Resource and Environmental Economics :

Concept, classification and problems of Natural resource economics property rights, public goods, common property and open access resource management – collective action, sources and types of pollution, economics of pollution control, environmental regulation and sustainable development.

### 6. Agricultural Marketing and Price Analysis :

Characteristics of agricultural products and production problems in agricultural marketing, marketed and marketable surplus, marketing efficiency, market integration, cooperative marketing, supply chain, management agricultural price policy and economic development commodity future markets, contract framing, Role of Govt. promoting / commodity trading.

**7. Commodity Features Trading :**

Evolution of Commodity markets—spot, forward and future markets, risk in commodity trading, need for risk management measures, FDI in commodity markets, hedging and speculation, speculative mechanism in commodity futures. Dumping and anti dumping, WTO.

**8. Farm Management :**

Economic principles applied to farm management—Law of diminishing marginal return, law of equi-marginal return, law of comparative advantage, opportunity cost principle. Farm planning and budgeting, partial budgeting, complete budgeting, enterprise budgeting and cash-flow budgeting, farm records, benefits of farm records, farm efficiency measures.

**9. Project Management :**

Project approach in financing agricultural, financial economic and environmental appraisal of investment projects, identification, preparation, appraisal, financing and implementation of projects. Project appraisal techniques, B-C ratio, NPV and IRR.

**10. Agricultural Development and Policies :**

Economic development and economic growth, indicators and measurement of economic development. Theories of economic growth, role of agriculture in economic / rural development, theories of agricultural development, population and food policy, poverty, inequality, models of agricultural development.

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**ECONOMICS**

Measurement of National income, Difficulties in measurement, GDP gap, Poverty, inequality, Lorenz curve—Gini Co-efficient, Consumer Price Index.

Monopoly, dumping, sweezy model, Baumols' model, bilateral monopoly, pareto optimality criteria, theory of second best.

Theory of income and employment, classical and Keynesian, unemployment— causes and remedies, consumption function, savings function, investment function, MEC, AD/AS framework, theory of multiplier, accelerator principle.

Role and functions of money, spectrum of money, money multiplier, banking systems, functions of commercial banks, function of Central Bank, money market and capital market, IS LM framework.

Business cycle, inflations, causes and consequences, Phillips curve, fiscal policy and moneta/policy, comparative advantage theory, balance of payments, foreign exchange determination, gains from trade.

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**APPLIED ECONOMICS**

Production function: homogeneous and non-homogeneous, short run production function.  
Cost function: long run and short run, producer's equilibrium, Cobb Douglas production function, CES function, returns to scale.

Dumping, cournot model, stackelberg model, Baumols model, limit pricing, game theory, prisoners dilemma, nash equilibrium, linear programming, simplex method.

Harrod-domar model, solow model, Robiosons model, Lucas model, Kalecki model, Multiplier and accelerator model of trade cycle.

Business cycle, Kaldor model, inflations, Phillips curve, balance of payments, foreign exchange determination, gains from trade.

Pareto optihiality criteria, Kaldor hicks compensation principle, theory of second best, arrows impossibility theorem, Richardian and Marxian theory of distribution.

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## DEMOGRAPHY

### 1. Sources of Demographic Data:

Census, registration of vital events, national sample survey and demographic surveys, socio-economic surveys, family and health surveys.

### 2. Methods of Demographic Analysis:

Rates, ratios, diagrams, percentages, projection, tabulation, cross tabulation, bivariate analysis and multivariate analysis.

### 3. Fertility:

Meaning and scope, measurements of fertility (Birth rate, general fertility rate, age specific fertility rate, total fertility rate, gross reproduction rate, net reproduction rate), factors affecting fertility, fertility trends of Odisha and India since 1951.

### 4. Mortality:

Meaning and scope, measurements of mortality (Death rate, age specific death rate, infant death rate, child death rate, maternal death rate), factors affecting mortality, mortality trends of Odisha and India since 1951.

### 5. Composition:

Population growth, density, age-sex composition (pyramid), sex ratio, child age (child population), reproductive age (reproductive population), working age (economic active population), aged population, dependency ratio.

### 6. Migration:

Meaning and scope, type of migration (internal and international), nature of migration (temporary, permanent), net migration, factors affecting migration, trends of migration (rural-urban, rural-rural, urban-urban, urban-rural).

### 7. Reproductive Health:

Meaning and scope, reproductive health situation in Odisha, reproductive morbidity (during pregnancy, child birth, neo-natal care), HIV and AIDS, causes and preventions of HIV, AIDS.

### 8. Human Development:

Meaning of human development, Human Development Index (HDI), Population Below Poverty Line (PBPL), Sustainable development, inter-relation between population growth and development (Education, Economy and Health).



**9. Environment:**

Meaning and scope, inter-relationship of population and environment. Types and causes of environmental pollution (Air, land, water, noise), deforestation and global warming, coping mechanism.

**10. Theories and Policies:**

Malthusian theory of growth, Malthusian theory of surplus, spencers bio-social theory, optimum theory of population. Theory of demographic transition, population plans and programmes in India. National population policy, millennium development goal.

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