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
 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:—

<table>
<thead>
<tr>
<th>PAPER</th>
<th>Subject</th>
<th>Duration</th>
<th>Maximum Marks</th>
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<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
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<tr>
<td>A. Compulsory Papers:</td>
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<tr>
<td>PAPER-I</td>
<td>General English</td>
<td>2 hours</td>
<td>100</td>
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| 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. Optional Papers: | | | |
| 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.
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
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: Prefect competition, Monopoly and Monopolistic Competition.

**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.
COMMERCE


2. **Accounting issues**: Relating to Amalgamation, Absorption and Reconstruction of Companies both external and internal.


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


SOCIIOLOGY

Origin and Growth of Sociology:
Emergence of Sociology as a science contributions and seminal ideas of the founding fathers: Auguste Comte, Karl Marx, Emile Durkheim, Max Weber.

Basic Elements of Social Life:
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

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
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:
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, Caley 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.


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, Leggendre and Bessel functions and their orthogonality, Sturm Liouvile system, Green’s functions.
7. **Partial Differential Equations**: Liner 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.


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.
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 vrs Multi-regional theory of human origins, Paleontological evidences of Human evolution: Australopithecinae, Homo-erectus, Homo-neandethalensis, Home-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. Sociogram, 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 Continnum, 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;
GEOGRAPHY

UNIT-I (Physical Geography):

UNIT-II (Human and Economic Geography):

UNIT-III (Cartography and Statistics):

UNIT-IV (Environmental Geography):
UNIT-V (Geographic Thought):
REGIONAL PLANNING

UNIT-I (Fundamental Concepts) :

UNIT-II (Some Theoretical Considerations) :
Economic Growth Theories: Rostow, Dualism and Theories of Modernization, dependency models, Regional Development Theories: Hirshman, Mydral, 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) :

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.
STATISTICS


5. Design and analysis of experiments, analysis of variance models – fixed and random. Analyse 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.

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.
ECONOMICS


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.
APPLIED ECONOMICS


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.
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 Perverty 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 warning, coping mechanism.

10. Theories and Policies: