

**Courses of Studies for the M. A./M. Sc. Anthropology**  
**For the academic Session 2012-14**  
**Course Scheme**

There shall be 20 papers with a total of 80 Credit Hours (hereafter CH) in the Post-Graduate Course in Anthropology. The courses have been spread over four semesters within an academic period of two years. Each semester consisting of five to six papers shall have maximum 20 CH. 50% papers shall be evaluated by external examiners. Fieldwork shall be evaluated only by the concerned supervising teacher. During the third and fourth semesters, each student shall opt for a specialization i.e. Social Anthropology (AN-SA) or Physical/Biological Anthropology (AN-BA) with two elective/special courses. The total teaching hours in a semester shall be 35 hours per week. The credit component includes 28 teaching hours (Theory-16 and Practical-12) and the noncredit component includes 11 hours (Tutorial-4, Proctorial-4 and Seminar-3) per week. The distribution of the total 80 CH over four semesters has been presented below.

**FIRST SEMESTER (20 CH)**

AN.C. 411 (4 CH)	Social/Cultural Anthropology
AN.C. 412 (4 CH)	Physical/Biological Anthropology
AN.C. 413 (4 CH)	Palaeo- anthropology
AN.C. 414 (4 CH)	Research Methodology
AN.C. 415 (2 CH)	Practical: Physical Anthropology
AN.C. 416 (2 CH)	Practical: Palaeo -anthropology

**SECOND SEMESTER (20 CH)**

AN.C. 421 (4 CH)	Understanding Society and Culture
AN.C. 422 (4 CH)	Social Exclusion and Inclusive Policy
AN.C. 423 (4 CH)	Tribal Anthropology
AN.C. 424 (4 CH)	Visual Anthropology
AN.C. 425 (2 CH)	Practical: Skill Development Assessment
AN.C. 426 (2 CH)	Term Paper and Seminar Presentation

**THIRD SEMESTER (20 CH)**

**Specialization Course: A. Social Anthropology (AN-SA)**

**Compulsory Courses**

AN-SA.C. 511 (4 CH)	Tribal Studies-I
AN-SA.C. 512 (4 CH)	Theory and Method in Social-cultural Anthropology
AN-SA.C. 513 (4 CH)	Fieldwork

**Elective Courses**

AN-SA.E. 514 (4 CH)	Anthropology of Children and Childhood-I
AN-SA.E. 515 (4 CH)	Resettlement and Rehabilitation- I

**Specialization Course: B. Physical/Biological Anthropology (AN-BA)**

**Compulsory Courses**

AN-BA.C. 511 (4 CH)	Fundamentals of Human Genetics
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AN-BA.C. 512 (4 CH)	Human Biology
AN-BA.C. 513 (4 CH)	Fieldwork

**Elective Courses**

AN-BA.E. 514 (4 CH)	Child Development
AN-BA.E. 515 (4 CH)	Applied Biological Anthropology- I

**FOURTH SEMESTER (20 CH)**

**Specialization Course: A. Social Anthropology (AN-SA)**

**Compulsory Courses**

AN-SA.C. 521 (4 CH)	Tribal Studies-II
AN-SA.C. 522 (4 CH)	Indian Anthropology
AN-SA.C. 523 (4 CH)	Dissertation and Viva Voce

**Elective Courses**

AN-SA.E. 524 (4 CH)	Anthropology of Children and Childhood-II
AN-SA.E. 525 (4 CH)	Resettlement and Rehabilitation- II

**Specialization Course: B. Physical/Biological Anthropology (AN-BA)**

**Compulsory Courses**

AN-BA.C. 521 (4 CH)	Human Population Genetics
AN-BA.C. 522 (2 CH)	Laboratory Based Practical-I
AN-BA.C. 522 (2 CH)	Laboratory Based Practical-II
AN-BA.C. 523 (4 CH)	Dissertation and Viva Voce

**Elective Courses**

AN-BA.E. 524 (4 CH)	Growth and Nutrition
AN-BA.E. 525 (4 CH)	Applied Biological Anthropology-II

A student opting for **Social Anthropology specialization** has to select any two of the following elective (E) courses for course number AN-SA.E.514 and AN-SA.E.515 during the **third semester** and similarly two more elective courses for course number AN-SA.E.524 and AN-SA.E.525 during the **fourth semester**.

- E1. Anthropology of Children and Childhood-I
- E2. Anthropology of Children and Childhood-II
- E3. Resettlement and Rehabilitation- I
- E4. Resettlement and Rehabilitation- II

A student opting for **Biological Anthropology specialization** has to select any two of the following elective (E) courses for course number AN-BA.E.514 and AN-BA.E.515 during the **third semester** and similarly two more elective courses for course number AN-BA.E.524 and AN-BA.E.525 during the **fourth semester**.

- E1. Child Development
- E2. Growth and Nutrition
- E3. Applied Biological Anthropology-I
- E4. Applied Biological Anthropology-II

**Details of the Course Curriculum**  
**FIRST SEMESTER**

**AN.C-411 (4CH) Social/Cultural Anthropology**

**UNIT-1: Basic Concepts**

Culture and society: Concept and Characteristics; Enculturation, Acculturation, Material and Non-material Culture, Cultural Lag

**UNIT-2: Family, Marriage and Kinship**

Family: Typology of family; Characteristics of Family, Joint Family System; Marriage: Types of Marriage, Ways of Acquiring Mates, Laws of Marriage; Kinship: Principle and Types of Descent and Rules of Residence; Kinship: Terminology; Kinship Usages

**UNIT-3: Economic and Political Organization**

Economic Organization: Concept of property; Division of labour; Systems of distribution, gift and ceremonial exchange; reciprocity; redistribution and market; Political organization: Primitive law and justice; Types of punishment

**UNIT-4: Religion**

Primitive Religion: animism, animatism, bongaism, totemism; Magic: functions and types; Magico-religious functionaries: shaman, priest, medicine-man, sorcerer, witch; Religion and magic compared.

**Recommended Books**

Beals, R.L. et al, 1977. *An Introduction to Anthropology*. New York: Macmillan Publishing

Herskovits, M.J. 1969. *Cultural Anthropology*. New Delhi: IBH Publishing Company.

K.M. Kapadia, *Family, Marriage and Kinship*.

Madan & Majumdar. *An Introduction to Social Anthropology*

Ember Carol. R and Melvin Ember, 2002 (10<sup>th</sup> Eds.) *Anthropology*. New Delhi: Pearson Education (Singapore) Pvt. Ltd

Forde, D, 1954. *Habitat, Economy and Society: A Geographical Introduction to Ethnology*. London, Methuen

Maclver and Page, *Society*

## **AN.C-412 (4CH) Physical/Biological Anthropology**

### **Unit-I: Basic Concepts**

Subject matters of physical anthropology/Biological anthropology and its scope, Difference from biological , Application of biological anthropology in medicine, forensic science, industries, defence services and genetic counselling.

### **Unit-II: Theories of Evolution**

Drawinism, Lamarkism and Synthetic theories; Adaptation: Meaning and its evolutionary significance

### **Unit-III: Fossil Evidence of Human Evolution**

Evidence of human evolution from morphological, anatomical, serological, chromosomal and genetic similarities between human and non-human living primates; Discovery, anatomical features and distribution of Dryopithecene, Astralopithecene, Homo-eractus, Homosapien neandrathalensis, Homosapien sapien

### **Unit-IV: Human Variation**

Basis of morphological variation, Social, environmental and genetic factors responsible for variation, Serology: ABO Blood Group, RH Factor, MN Factor Mechanism of the formation and extinction of ethnic groups/race

### **Recommended Readings:**

1. Ashley, Montague. *Concept of Race*.
2. Backer, P.T. & Weiner (eds.). *Biology of Human Adaptability*.
3. Tanner, J. M. *Foetus to Man*
4. Buettner-Janusch, *Origins of Man*.
5. M.Ember and Ember. *Anthropology*.
6. Emery, A.E.H. *Elements of Medical Genetics*.
7. Harrison, G.A et.al. *Human Biology*.
8. Harrison, G.A. and Boyce, J. *The Structure of Human Population*.
9. Mange and Mange. *Basic Human Genetics*.
10. Marrell. *Evolution and Genetics*.
11. Sarkar S.S. *Aboriginal races of India*.
12. Sahlins and Service. *Evolution and Culture*.

## **AN.C-413 (4CH) Paleoanthropology**

- Unit I** A brief outline on the origin of earth and life and geological time scale; Pleistocene epoch chronology, Pleistocene Glaciations' of Europe, Evidences and Causes of Great Ice Age, Typology and technology: tool making techniques, tool types.
- Unit II** Dating methods: absolute and relative dating: stratigraphy, river terraces, dendrochronology, thermoluminescence dating, pollen dating, Glacial varve analysis, potassium-argon method, fluorine dating, C-14 dating.
- Unit III** Cultural chronology: Paleolithic, Mesolithic and Neolithic cultures in India: special salient features of environment, sites and areas, typo-technology, distribution, artifacts and their physical forms.
- Unit IV** Indus valley civilization; Copper and Iron age, features and distribution.

### **Recommended Readings:**

1. Agrawal, D.P. *The Archaeology of India*, Curzon Press.
2. Allchin, B. & Allchin, F.R. *The Rise of Civilization of India and Pakistan*. Cambridge University Press.
3. Ashley, Montague. *Physical Anthropology and Archaeology*.
4. Barmown, Victor. *Physical Anthropology and Archaeology*, Illinois, The Dorse Press Home Wood.
5. Banerjee. *Iron Age in India*. Munshiram Manoharlal.
6. Bordes, F. *Old stone Age*. Weidenfeld and Nicolson.
7. Brothwell D. & Higgs E. (ed.). *Science in Archaeology*. Thames and Hudson.
8. Budtzer, K.W. *Environment and Archaeology*.
9. Clark, D.L. *Analytical Archaeology*. Methuen and Co. Ltd.
10. Coles, J.M. & Higs, E.S. *The Archaeology of Early Man*. Faber and Faber.
11. Das, B.M., *Outlines of Physical Anthropology*. Kitab Mahal.
12. James, J. Hester, *Introduction to Archaeology*. Holt, Rinehart and Winston.
13. Michel, J.W., *Dating Methods in Archaeology*. Seminar Press.

14. sakalia, H.D., *New Archaeology - Its Scope and Application to India*, Ethnographic and Folk Culture Society.
15. Sankalia, H.D. *Stone Age Tools, Families and Techniques*. Pune, Deccan College.
16. Sankalia, H.D. *Pre- and Proto-history of India and Pakistan*. Pune, Deccan College.
17. Zeuner, F.E. *Pleistocene Period*. Hutchinson.

#### **AN.C-414 (4CH) Research Methodology**

##### **Unit-I: Research and its Objectives**

Formulation and selection of a research problem; Objectivity of Research

##### **Unit-II: Research Design and Hypotheses**

Concept, need and features of a research design. Different types of research design: Exploratory, descriptive Diagnostic and experimental research; Hypothesis: Types and Characteristics of a good hypotheses

##### **Unit-III: Sampling Design**

Concept: universe and sample; Criteria for deciding a representative sample. Probability and non-probability sampling: Random, stratified, proportionate, quota, cluster or multistage, purposive and systematic sampling. Sampling error.

##### **Unit-IV: Methods of Data Collection**

Primary and secondary data; Methods of collection: observation, questionnaire, interview, case study, genealogy, participatory rural appraisal (PRA), sociometry and Focused Group Discussion

#### **Books Recommended**

1. Young P.V ,Scientific Social Survey -..
2. Gupta, S.P Statistical Methods , Sultan Chand & Sons Publisher- New Delhi
3. Kothari, C.R. Research Methodology, Methods and Techniques -Wiley Eastern Limited - New Delhi
4. Singhal, M. ,Agarwal, Lakshmi Narain Elements of Statistics, Theory & Practice -., Educational Publisher - Agra
5. Gupta, C.B and Gupta , V An Introduction to Statistical Methods, Vikas Publishing House PVT Ltd. New Delhi.

6. Bandarkar, P.L. and Wilkinson, T.S. *Methodology and Techniques of Social Research*, Himalaya Publishing House- Mumbai.
7. Bhatnagar, G.L. *Research Methods & Measurements in Behavioural & Social Sciences* Agri. Cole. Publishing Academy, New Delhi.
8. Garrett, Henry, E. *Statistics in Psychology & Education* -, David Heley and Co.
9. Mukherjee, R. *The Quality of Life: Valuation in social Research* -- Sage publications, New Delhi
10. Elhance, D.N. *Fundamentals of Statistics*-..
11. Garrett & Word, *Statistics in Psychology & Education*-.
12. Mohsin, S.M. *Research Method in Behavioural Science*-..
13. Sidhu Kulbir Singh *Methodology of Research*-.

**AN.C. 415 (2 CH) Practical: Physical Anthropology**

1. Somatometry and Somatoscopy, Importance of body measurements in Anthropology; Application in growth, forensic, clothing, sports, etc.; Selected measurements on head; indices selected measurements for height, breadth, and circumference, indices selected traits on somatoscopy.
2. Osteology and osteometry, Importance of studying human skeletal system in anthropology, Structure-function, classification Axes and planes Skull and mandible (description), Long bones (description and side identification), Vertebral column and girdles, Age and sex differences, Selected measurements and indices.

**Recommended Readings:**

1. Binford, L.R., *Ancient Man and Modern Myths*, Academic Press.
2. Ghoshmaulik S.K, Ratha Basanti and Mishra S.K, *Practical Anthropology*, Orissa, Society for Anthropological and Archaeological Studies.
3. Paddar, S.R. and Bhagat, A., *Handbook of Osteology*.
4. Singh, I.P. and Bhasin, M.K., *Anthropometry*.

**AN.C. 416 (2 CH) Practical: Palaeoanthropology**

1. Demonstrate the techniques of manufacture, function and social implications of artifacts.
2. Handle stone artifacts, characterizing lower, middle, upper palaeolithic, Mesolithic and Neolithic periods

3. Drawing and description of prehistoric tools of Palaeolithic, Mesolithic and Neolithic periods
4. Periodic maintenance of practical records shall be taken into consideration while awarding grades to the candidates

## SECOND SEMESTER

### AN.C. 421 (4 CH) Understanding Society and Culture

#### Unit I: Basic Concepts

Meaning: Acculturation, Enculturation, Cultural lag, Cultural relativism; Culture and Civilization; Meaning and characteristics of Society, Community, Institution, Association

#### Unit II: Social Change

Theories and factors of social change, Processes of social change: Sanskritization, Westernization, Urbanization, Industrialization

#### Unit III: Social Stratification

Basis of stratification, Social Differentiation and Ranking, Social Evolution and Social Progress

#### Unit IV: Caste system

Caste system in India, Status and Role, Caste, Class and Power in India, Jajmani System, Social mobility.

### Recommended Readings:

1. Evans-Pritchard, E.E. *Social Anthropology*.
2. Honnigman, J. *Handbook of Social and Cultural Anthropology*.
3. Fox, Robin. *Kinship and Marriage*.
4. Sahlins & Service. *Evolution and Culture*. The University of Michigan Press, Ann Arbor.
5. Mair, Lucy. *An Introduction to Social Anthropology*, Oxford University Press.
6. Barth, F. *Ethnic Group Boundaries*.
7. Barnet, H.G. *Innovation. The Basis of Culture Change*.
8. Rogers, E.M. & Shoe Maker, F.F. *Communication of Innovation*.
9. Rogers, E.M., *Diffusion of Innovation*.



10. Rad-cliffe Brown, A.R. *Structure and Function in Primitive Society*.
11. Harris, Marvin. *Cultural Anthropology*.
12. Malinowski, B.K. *Scientific Theory of Culture and Other Essays*.
13. Foster, G.M. *Tradition, Cultures and Impact of Technological Change*.
14. Dalton, George. *Tribal and Peasant Economies: Readings in Economic Anthropology*.
15. Kluckhohn, C. *Mirror for Man*.

#### **AN.C. 422 (4 CH) Social Exclusion and Inclusive Policy in India**

- UNIT-I** Social Exclusion: Concept, Meaning and forms of social exclusion, Who is socially excluded and why this matter, Role of culture in social exclusion.
- UNIT-II** Cases of Social Exclusion: Dalit, ST, Religious minorities, Children, Women, Aged, Physically and mentally challenged people.
- UNIT-III** Specific areas of Social Exclusion and marginalization: People affected by HIV/AIDS, Displaced people of mega development projects, Poverty leading to social marginalization, Caste system, inequality and social exclusion, Social exclusion and exploitation, Reducing poverty by tackling social exclusion.
- UNIT-V** Inclusive Policy: Current policies of protective discrimination, Public policies to reduce social exclusion, Constitutional safeguards, *Panchayati Raj* and women empowerment, Convention on the Rights of the Child, Sub-plan approach to tribal development, Possible improvement in current policies and strategies relating to weaker section

#### **Recommended Readings:**

1. Thorat, *Social Exclusion in India*. Oxford
2. DFID Report. Tackling Poverty by Reducing Social Exclusion
3. *Contemporary Society: Tribal Studies* (Vol 1 to VIII). New Delhi: Concept Publishing Company

#### **AN.C. 423 (4 CH) Tribal Anthropology**

##### **Unit I: The Concept of Tribal Society**

Anthropology as a field in understanding tribal society, Concept of Tribe, Tribal situation in India, Tribal Situation in Orissa,

**Unit-II: Forest and Tribe**

Forest-tribe interaction, Deforestation and its impact on tribal population, Tribal rights on forest and land, Role of State and NGOs to protect and promote the tribals

**Unit III: Tribal Problems**

Major Tribal Problems; Structural constraints to tribal education, Social Backwardness, Folk-Urban Continuum

**Unit-IV: Tribal Development**

Sustainable Tribal development, Pre-independence and post- independence era of tribal development; Neheru's perspectives on tribal development

**Recommended Readings:**

1. Behera, D.K and Georg pfeffer. *Contemporary Society Tribal Studies, Volume I to VII.* New Delhi: Concept Publishing Company
2. Georg Pfeffer. *Hunters, Tribes and Peasant: Cultural Crisis and Comparison.* Bhubaneswar: Niswas
3. Vidarthy, L.P. and Rai. *Applied Anthropology in India*
4. Vidarrthy.L.P. and B.N. Sahay. *Applied Anthropology and Development in India.* New Delhi: National Publishing House
5. Vidarthy, L.P. *Tribal Culture in India*
6. A.K. Pandey. *Tribal Situation in India.* New Delhi: Manak
6. Vidyut Joshi. *Tribal Situation in India.* New Delhi: Rawat
7. A.K. Singh. *Tribal Development in India.* New Delhi: Classical Publishing Company
8. Choudhury, B. *Tribal Development in India*
9. Hassnain, Nadim. *Tribal India*

**AN.C. 424 (4 CH) Visual Anthropology**

**Unit I: Introducing Visual Culture**

What is Visual Culture? Photographic and Digital Media: Still, Interactive and Moving

**Unit-II: Ethnographic Photography**

Early Ethnographic Photography: Contexts and Trends, Ethnographic Photography: Conventions and Methodologies, Photography in Ethnographic Research

**Unit-III: Indigenous Uses of Photography**

Different kinds of photography work individually and collaboratively in different contexts, Documentation of personal experiences through photographic and digital work,

**Unit-IV: Ethnographic Films**

Theoretical issues concerning ethnographic film, ethical dimensions of ethnographic film, Interdependency of technology and culture

**Recommended Readings:**

Adam, H.C. Zwischen Geschäft und Abenteuer. Der Photograph im 19.Jh, In: Dewitz, B.v. / Scotti, R. (eds.) Alles Wahrheit! Alles Lüge! Photographie & Wirklichkeit im 19.Jh., Köln: Verlag der Kunst,

Alloula, M. Harems Phantasien - Aus dem Postkartenalbum der Kolonialzeit, Freiburg: Beck & Glückler.

Athique, Adrian / Douglas Hill The Multiplex in India.A cultural economy of urban leisure. London and New York: Routledge (Chapter 1: Situating the multiplex as a research object).

Athique, Adrian *The multiplex in India : a cultural economy of urban leisure*, London: Routledge.

Baatz, W. 1997. Geschichte der Fotografie, Köln: Dumont.

Babb, L.A. Glancing - Visual Interaction in Hinduism, In: Journal of Anthropological Research

Cohn, B. The Past in the Present: India as Museum of Mankind, In: History and Anthropology

Davis, R. (ed.) Picturing the Nation. Iconographies of Modern India, Hyderabad: Orient Longman.

Dehejia, V. India through the Lens. Photography 1840-1911, Washington D.C.: Smithsonian Institute.

Desai, Jigna .Beyond Bollywood: The Cultural Politics of South Asian Diasporic Film, NY and London: Routledge.

Mirzoeff, N. The Visual Culture Reader, London: Routledge.

Mishra, VijayBollywood Cinema: Temples of Desire, NY: Routledge.

Mitter, P. Art and Nationalism in Colonial India 1850-1922, Cambridge: Cambridge University Press.

### **AN.C-425 (2 CH) Practical: Skill Development Assessment**

A student has to carry out practical as a preparatory work for fieldwork and dissertation writings during first semester. A practical record has to be maintained by each student. This practical on research methods would include the following items:

- Students will be made to learn the skill of writing (1) Plan proposal (2) Project Report (3) Resume (4) Organisational brochure (5) Questionnaire (5) Annotated bibliography and references.
- They will be further made to learn (1) Skill for participating in group-discussion (2) Making scholarly presentation with proper style of documentation (3) Preparing text for power point presentation (4) Conducting interviews
- Students will be made to learn: (1) Rapport establishment (2) Observation of an event and recording (3) Drawing of village map and taking field photographs
- Handling of specific situations in the field (Here the basic purpose is to assess the student's innovative ideas).

The knowledge of the students on the above items shall be examined by an external examiner in consultation with the internal examiner from the department.

### **Recommended Readings:**

1. Royal Anthropological Institute of Great Britain and Ireland, *Notes and Queries on Anthropology*, London, Routledge and Kegan Paul Ltd.
2. Allison & Hockey & Dawson, Andrew, *After Writing Culture*, Routledge.
3. Maanen, John Van, *Tales of the Field: On Writing Ethnography*, Chicago, The University of Chicago Press.
4. Pelto P.S. & Pelto G.H., *Anthropological Research*, London, Cambridge University Press.
5. Young, Pauline, *Scientific Social Surveys and Research*.
6. Wiener, J.S. & J.A. Lourie, *Human Biology: A Guide to Field Methods*.
7. Murdock, Outline of Cultural Materials.

### **AN.C-426 (2 CH) Term Paper and Seminar Presentation**

In this paper the candidate shall prepare a Term Paper in consultation with the Course Teacher. The candidate shall give a seminar presentation. The ratio of awarding marks shall be, 50% by the Course Teacher and the rest 50% shall be by the Teachers' Council.

## **THIRD SEMESTER**

### **Specialization Course: A. Social Anthropology**

#### **Compulsory Courses**

#### **AN-SA.C. 511 (4 CH) Tribal Studies-I**

##### **Unit I Concept of Tribe**

Characteristics of Tribe, Tribes in India: Classification and Distribution of Tribes based on Economic, Cultural, Linguistic and Racial.

##### **Unit II Problems of Tribes**

Land Alienation, Indebtedness, Tribal Education in Residential Schools: Problems and Prospects, Tribal Health in Orissa/India

##### **Unit III Tribal Economy**

Shifting Cultivation, Deforestation and its Impact on Tribal, Tribal Craft, Women in Tribal Societies: Their Contribution to Household Economy.

##### **Unit IV Tribal Policy**

Constitutional Safeguards for the Tribal, Fifth and Sixth Schedules, The National draft Tribal Policy in India

#### **Recommended Readings:**

1. Behera, D.K and Georg pfeffer. *Contemporary Society Tribal Studies, Volume I to VII.* New Delhi: Concept Publishing Company
2. Georg Pfeffer. *Hunters, Tribes and Peasant: Cultural Crisis and Comparison.* Bhubaneswar: Niswas
3. Vidarthi, L.P. and Rai. *Applied Anthropology in India*
4. Vidarrthy.L.P. and B.N. Sahay. *Applied Anthropology and Development in India.* New Delhi: National Publishing House
5. Vidarthi, L.P. *Tribal Culture in India*
6. A.K. Pandey. *Tribal Situation in India.* New Delhi: Manak
6. Vidyut Joshi. *Tribal Situation in India.* New Delhi: Rawat
7. A.K. Singh. *Tribal Development in India.* New Delhi: Classical Publishing Company

8. Choudhury, B. *Tribal Development in India*
9. Hassnain, Nadim. *Tribal India*

**AN-SA.C. 512 (4 CH) Theory and Method in Social-cultural Anthropology-I**

**Unit I Evolutionism**

Cultural evolutionism: Unilinear, Universal and Multilinear; Neo-evolutionism: Leslie White, Julian Steward

**Unit II Diffusionism**

British, German-Austrian and American school of thoughts

**Unit III Functionalism and Structuralism**

Durkheim, Malinowski; Structural-functionalism: Radcliffe Brown; Structuralism: Levi Strauss

**Unit IV Contributions to Indian Studies**

S.C. Roy, D.N. Majumdar, V. Elwin, L.P. Vidyarthi, Irawati Karve, M.N. Srinivas, S.C. Dube

**Recommended Readings:**

1. Evans-Prichard, *A History of Anthropological Thought*.
2. Harris, Marvin, *Rise of Anthropological Theory*, London, Routledge and Kegan Paul.
3. Bidney, David, *Theoretical Anthropology*, New York, Columbia University Press.
4. Erickson, Paul, *Anthropological Lives: Biographies of Eminent Anthropologists*, New Delhi, Reliance.
5. Sahilns & Service, *Evolution and Culture*.
6. Schneider et al., *Symbolic Anthropology: A Reader in the Study of Symbols and Meanings*.
7. Turner, Roy, *Ethnomethodology*.
8. Douglas, Marry, *Cultural Bias*.
9. Gerttaz, Clifford, *The Interpretation of Culture*.
10. Ingram, John, *Psychological Anthropology Reconsidered*.
11. Manganaro, Marc, *Modernist Anthropology: From Fieldwork to Text*.
12. Nadel, S.F., *The Foundations of Social Anthropology*.
13. Manners, R.A. & David Kaplan (Eds.), *Theory in Anthropology*.
14. Levi-Strauss, *Structural Anthropology*.

### **AN-SA.C. 513 (4 CH) Fieldwork**

Each student shall have to undergo training for learning and use of different techniques of scientific data collection during 30 days of fieldwork under the supervision of a teacher, as nominated by the head of the department, in a tribal/rural area. The fieldwork for a particular year may be camp-based or non-camp based one depending on the decision of the teachers' council of the department. The exact date of commencement of fieldwork shall be announced by the department. Student failing to complete the fieldwork in a particular year can only clear the paper by completing fieldwork next year. No separate fieldwork shall be arranged for such students during the same semester. There shall be instructional hours or classes per week for every candidate for the preparation of synopsis and questionnaire/schedule for the topic of the study during the semester. Classes shall be taken by the concerned supervisors. The supervising teacher shall be the examiner for the paper. The performance of the candidate will be evaluated on the basis of the field notes and fieldwork performance by the supervising teacher during the fieldwork. The final grading will be done by the supervising teacher at the end of the semester.

### **Elective Courses for Social Anthropology Specialization**

**(For paper AN-SA.E. 514 and AN-SA.E. 515)**

#### **E 1. Anthropology of Children and Childhood-I**

**Unit-I: Situation of Children in India**

Child labour in India, Female working children, Street children, Impact of poverty and drought on children, Child domestic workers

**Unit-II: Children Under difficult Situations**

Overburdened school-going children, Growing up in slums, Plight of the girl-child in India, Children in cyber environment.

**Unit-III: Rights of the Child**

UN Convention on the Right of the Child, What is children's participation? Why should children participate?

**Unit-IV: Corporal Punishment**

Strategy to address the physical punishment and emotional abuse of children, Strategy to address corporal punishment, National Policy for Children

### Recommended Readings:

1. Verhellen, Eugeen, *Understanding Children's Right*.
2. Verhellen, Eugeen, *Monitoring Children's Right*.
3. Pfeffer, George & D.K. Behera, *Contemporary Society: Childhood and Complex Order*.
4. James, Alison and Allan Prout. *Structuring and Restructuring of Childhood*
5. Allan Prout. *Theorizing Childhood*
6. Behera, D.K., *Children and Childhood in our Contemporary Societies*.
7. Qvortrup, J. *et al.* (Eds), *Childhood Matters, Social Theory, Practice and Politics*.

## E 2. Rehabilitation and Resettlement-I

### Unit I Basic Concepts of Rehabilitation and Resettlement

R & R - A Global Scenario, R & R - A National Scenario, Theory of R & R developed by Michael Cernea

### Unit II Reconstruction Model

Planning for Resettler's Recovery by using Risks and Reconstruction Model of Michael Cernea

### Unit III Facilitating proper R&R

Identification of PAPs & baseline data collection, Process of Planning R & R, Minimization of displacement, Valuation of Assets, Resettlement Issues, Monitoring task & Institutional Arrangement

### Unit IV Application of R & R

Preparation of RAP with proper budget and action plan, Preparation of Community Development activities for displaced people

### Recommended Readings:

1. Fernandes, Walter and Thakria, Enekshi G., *Development, Displacement and Rehabilitation*.
2. Gangopadhyay, T. and Mankodi, K.A., *Rehabilitation: The Ecological and Economic Crisis*.
3. Keiler, Stephen L., *Uprooting and Social Change*.
4. Schdder, T., *The Human Ecology and Big Projects: River Basin Development and Resettlement*.



## Specialisation Course: B. Physical/Biological Anthropology

### Compulsory Courses

#### AN-BA.C. 511 Fundamentals of Human Genetics

- Unit I** Difficulties in Subjecting Man for Genetic Investigations, Methods of Studying Heredity: Pedigree Method, Twin Method, Population, Family, Linkage Studies.
- Unit II** Genetic Significance of Cell Division, Sex Determination. Normal Human Karyotype. Abnormal Human Karyotypes: Numerical and Structural Chromosomal abnormalities in Man - Down's Syndrome, Turner Syndrome and Klinifelter Syndrome.
- Unit III** Structure and Function of DNA, RNA, Proteins, Concept of Gene, Genetic Code and its Expression: Replication, Transcription and Translation. Method of Creating Recombinant DNA, Genetic Engineering, Genome Project
- Unit IV** Gene Action: Complementary, Supplementary, Duplicative, Cumulative or Additive Genes. Epistatis, Pleiotropism, and Penetrance. Autosomal and Sex-linked Inheritance Theories with Examples. Multiple allelic Inheritance: ABO Blood Groups,

#### Recommended Readings:

1. Bhamrah and Chaturvedi, *A Text Book of Genetics*.
2. Mange and Mange, *Basic Human Genetics*.
3. Rothwell, N.V., *Human Genetics*.
4. Harrison *et al.*, *Human Biology*.
5. Curt Stern, *Principles of Human Genetics*.
6. Winchester, *Genetics*.
7. Ashley Montagu, *Concept of Race*.
8. Shukla, B.R.K. & Rastogi, S., *Physical Anthropology and Human Genetics*.
9. Dalela and Verma, *T Text Book of Genetics*.
10. Bodmer & Cavalli Sforza, *Genetics, Evolution and Man*.
11. King and Stansfield, *A Dictionary of Genetics*.
12. Brudette, W.J., *Methodology in Human Genetics*.
13. Yunis, J.J. (Ed.), *Biochemical Methods in Red Cell Genetics*.
14. Harris, H., *Human Biochemical Genetics*.

## **AN-BA. C. 512      Human Biology**

- Unit I**            Meaning, scope and development of human biology, major problems in human population biology and the IBP approach.
- Unit II**            Human growth and development: growth from conception to maturity senescence differences in physique; Factors controlling growth and development in populations.
- Unit III**          Nutritional and diet survey method: nutritional requirement for normal growth from infancy to old age; The energy value of foods: undernutrition, and malnutrition, nutritional adaptation in man; Human adaptation - physiological adaptation to heat, cold and high altitude.
- Unit IV**          Blood pressure: age and sex variation; Human body composition: body density, lean body mass and body fat, muscular strength, work capacity; Human hemoglobin synthesis, normal and abnormal Hb types; Thalassaemia association.

### **Recommended Readings:**

1. Baker, P.T. & Weiner (Eds.), *The Biology of Human Adaptability*.
2. Beal, Virginia, *Nutrition and the Life Span*.
3. Beutler, E., *Red Cell Metabolism: A Manual of Biochemical Methods*.
4. Bouge, D., *Principles of Demography*.
5. Brock and Mayo, *The Biochemical Genetics of Man*.
6. Burdette, W.J., *Methodology in Human Genetics*.
7. Craig, *Human Development*.
8. Dixit, M., *Human Nutrition Principles and Applications in India*.
9. Emery A.E.H., *Elements of Medical Genetics*.
10. Eveleth, P.B. & Tanner, J.M., *Worldwide variations in Human Growth*.

### **AN-BA. C. 513: Fieldwork**

Each student shall have to undergo training for learning and use of different techniques of scientific data collection during 30 days of fieldwork under the supervision of a teacher, as nominated by the head of the department, in a tribal/rural area. The fieldwork may be camp-based or non-camp based one depending on the decision of the teachers' council of the department. The exact date of

commencement of fieldwork shall be announced by the department. Student failing to complete the fieldwork in a particular year can only clear the paper by completing fieldwork next year. No separate fieldwork shall be arranged for such students during the same semester. There shall be instructional hours or classes per week for every candidate for the preparation of synopsis and questionnaire/schedule for the topic of the study during the semester. Classes shall be taken by the concerned supervisors. The supervising teacher shall be the examiner for the paper. The performance of the candidate will be evaluated on the basis of the field notes and fieldwork performance by the supervising teacher during the fieldwork. The final grading will be done by the supervising teacher at the end of the semester.

**Elective courses for Physical/Biological Anthropology Specialization  
(For Paper AN-BA. E. 514 and AN-BA. E. 515)**

- E 1. Child Development**
- Unit I** Introduction to the field of child development and principles of development  
Extra-uterine growth of pre-term and small for gestational age children. Factors influencing birth weight: maternal anthropology, nutrition and socio-economic status.
- Unit II** Infant feeding and growth: Breast feeding, bottle feeding and weaning foods.
- Unit III** Motor skills: Milestones, functions and sequences of the motor skill development. Endocrinological regulation of postnatal growth
- Unit IV** Assessment of growth retardation of children born on term and pre-term. The creation and use of growth references for evaluating growth.

**Recommended Readings:**

1. Harrison *et al.*, Human Biology.
2. Watson and Lowery: Growth and Development of Children
3. Tanner, J. M.: Fetus into Man
4. Hurlock, E.B. : Child Development
5. L.E. Berk Baston: Child Development
6. Hurlock, E.B : Developmental Psychology
7. F.P. Rice : Human Development
8. ;M. Cole and S. Cole: The Development of Children
9. J.W. Santrock and S.K. Yussen: Child Development: An Introduction

10. A. Clarke Stewart and S. Friedman: Child Development: Infancy through Adolescence

**E 2. Applied Biological Anthropology-I**

**Unit I** Meaning and scope of biological anthropology, Structure, function and physiological changes of various body parts according to age.

**Unit II** Testing of pulmonary, circulatory and muscular changes during rest and exercise according to age, sex, occupation.

**Unit III** Heredity and environment in body dimensions - relationship of different types of sports efficiency and different body proportions.

**Unit IV** Ecological, ethnic and genetic variation of body shape and size.

**Recommended Readings:**

1. Backer, PT and Weiner (Eds) The Biology of Human Adaptability
2. Beal, Virginia Nutrition and the Life Span
3. Beutler, E Red Cell Metabolism: A Manual of Biochemical Methods
4. Brock and Mayo The Biochemical Genetics of Man
5. Craig Human Development
6. Burdette, WJ Methodology in Human Genetics
7. Emery, AEH Elements of Medical Genetics
8. Eveleth, PB and Tanner, JM Worldwide Variation in Human Growth
9. Forbes, GB Human Body Composition
10. Sodhi, HS Sports Anthropometry
11. Willigt, JV Applied Anthropology: An Introduction

**FOURTH SEMESTER**

**Specialisation Course: A. Social Anthropology (AN-SA)**

**Compulsory Courses**

**AN-SA. C. 521 Tribal Studies-II**

**Unit I Land Relations in Tribal Areas**

Tribal Ethnicity, Tribal Religion, Man-Nature Relationship

**Unit II Approches for Sustainable Tribal Development in India**

ITDA, Sub-plan Approach, Cultural Constraints to Tribal Development

- Unit III State Authority in Tribal Areas**  
Displacement and Rehabilitation, Primitive Tribal Groups of Orissa, Multiple Patterns of Integration of Tribes and Castes in Orissa,
- Unit IV Mega Development Projects**  
Impact of Mega Development Projects on the Life of Tribal; The Impact of Upper Indravati River Valley Project on the Life of Tribals of Kalahandi.

**Recommended Readings:**

1. Behera, D.K and Georg pfeffer. *Contemporary Society Tribal Studies, Volume I to VI.* New Delhi: Concept Publishing Company
2. Georg Pfeffer. *Hunters, Tribes and Peasant: Cultural Crisis and Comparison.* Bhubaneswar: Niswas
3. Vidarthy, L.P. and Rai. *Applied Anthropology in India*
4. Vidarrthy.L.P. and B.N. Sahay. *Applied Anthropology and Development in India.* New Delhi: National Publishing House
5. Vidarthy, L.P. *Tribal Culture in India*
6. A.K. Pandey. *Tribal Situation in India.* New Delhi: Manak
6. Vidyut Joshi. *Tribal Situation in India.* New Delhi: Rawat
7. A.K. Singh. *Tribal Development in India.* New Delhi: Classical Publishing Company
8. Choudhury, B. *Tribal Development in India*
9. Hassnain, Nadim. *Tribal India*

**AN-SA. C. 522 Indian Anthropology**

- Unit I Major Socio-cultural changes**  
Joint Family System, Status of Women in India, Jajmani System, Disintegration of Caste System
- Unit II Major Social Problems**  
Poverty, Unemployment, Crime, Drug Addiction; Welfare Schemes, Programmes, Government Organizations and Voluntary Organizations
- Unit III Culture and Personality**  
Meaning of Culture, Functions of Culture, Meaning and Determinants of Personality, Culture and Personality Disorganization
- Unit IV Social Change**

Meaning of Social Change, Factors of social change, Barriers to social change,  
Difference between social change and cultural change

**Recommended Readings:**

1. Srinivas, M. N., *Social Change in Modern India*.
2. Singh, Yogender, *Social Change and Stratification*.
3. Singh, Yogender, *Modernization of Indian Tradition*.
4. Melvin, Tumin, *Social Stratification*.
5. Briestead, Robert, *Social Order*.
6. Rao, M.S.A., *Urbanization in India*.
7. Madan, T. .N and Majumdar, *Introduction to Social Anthropology*.
8. Sharma, K. L., *Social Stratification in Rural India*.
9. Unithan, T.K., *Social Stratification*.

**AN-SA. C. 523          Dissertation and Viva**

The dissertation shall be based on the data collected by the candidate in the course of a month-long fieldwork conducted during third semester. Dissertation is to be prepared by the student under the supervision of the concerned teacher. The student is required to submit the dissertation through the supervising teacher to the Head of the Department for its evaluation at least fifteen days in advance of the date notified for examination. The dissertation shall be evaluated by an external examiner in consultation with the internal examiner (the supervising teacher). The candidate shall be awarded grade both by the internal and external examiners on the basis of his/her dissertation and performances in the viva-voce.

**Elective Courses for Social Anthropology Specialization**

**(For paper AN-SA. E. 524 and AN-SA. E. 525)**

**E 3.                  Anthropology of Children and Childhood-II**

**Unit I                Childhood in Changing Context**

Childhood in South Asia, Influence of Dual-Career Family on the Youth in Urban India

**Unit I1              Children in 21<sup>st</sup> Century**

Children's Creativity, Children's Competency, Children's Use of Social Space

**Unit III Child Abuse**

HIV/AIDS Affected Children, Children Affected by Armed Conflict, Child Sex Workers,

**Unit IV Children without Childhood**

Invisible Little Big Work Force, Educational Institutionalisation of Tribal Children: *Ashram Schools/ Kanyasharms*, Impact of Poverty and Drought on Children

**Recommended Readings:**

1. Verhellen, Eugeen, *Understanding Children's Right*.
2. Verhellen, Eugeen, *Monitoring Children's Right*.
3. Pfeffer, George & D.K. Behera, *Contemporary Society: Childhood and Complex Order*.
4. James, Alison and Allan Prout. *Structuring and Restructuring of Childhood*
5. Allan Prout. *Theorizing Childhood*
6. Behera, D.K., *Children and Childhood in our Contemporary Societies*.
7. Qvortrup, J. et al. (Eds), *Childhood Matters, Social Theory, Practice and Politics*.

**E 4. Rehabilitation and Resettlement -II**

**Unit I Types of Displacements**

A Case Analysis: Irrigation projects, Industrial projects, Hydro-electric project, Mining project

**Unit II Impact of displacement on Indigenous people**

(Case of Upper Indravati Hydro-Electric Project)

**Unit III Institutional Arrangement**

Preparation of Community Development activities for displaced people, National R & R Policies and Act.

**Unit IV Legal Framework**

The Forest Policy, 1894, Indian Forest Act 1865 & 1878, The land Acquisition Act (LAA), 1894, Wildlife (Protection Act), 1972,

**Recommended Readings:**

1. Bose, B.P.C., *Disaster Policies and Administration: A Study of Three Andhra Disasters*.
2. Cohen, Stephen P. and C.V. Raghavulu, *The Andhra Cyclone of 1988. Individual and Institutional Responses to Mass Death*.

3. Goldsmith and Hildyad, N., The Social and Environmental Effects of Large Dams.

### Specialisation Course: B. Physical/Biological Anthropology (AN-BA)

#### Compulsory Courses

#### AN-BA. C. 521. Human Population Genetics

- Unit I** Scope of human population genetics, its relevance in anthropology; concept of gene frequency and gene pool. Population structure and genetic structure. Mendelian population as the ultimate endogamous unit of population genetic study. Population structure in India. Role of social divisions and heirarchy in genetic isolation. Models of isolation and reproductive isolates.
- Unit II** Models to study gene flow - 'island' model, 'diffusion' model, 'isolation by distance' model. Mating system: Random mating or panmixis, nonrandom mating or selective mating/ preferential or assortative mating. Inbreeding and outbreeding. Inbreeding coefficient, inbreeding depression, homozygosis and heterozygosis.
- Unit III** Principles of genetic equillibrium, Hardy-Weinberg law, causes for changes in gene frequencies in a population: mutation, hybridisation, genetic drift and selection.
- Unit IV** Genetic polymorphism - Balanced and transient polymorphism with reference to sickle cell gene. Measurement of genetic similarity between populations.

#### Recommended Readings:

1. Cavalli-Sforza, L.L. & Bodmer, W.F., *The Genetics of Human Populations*.
2. Crow, J.F. & Kimura, M., *An Introduction to Population Genetic Theory*.
3. Stern, C., *Principles of Human Genetics*.
4. Winchester, A.M., *Human Genetics*.
5. Giblett, E.R., *Genetic Markers in Human Blood*.
6. Bhende and Kanitkar, *Principles of Population Studies*.
7. Cox, Peter, *Demography*.
8. Houser & Duncan, *The Study of Population*.
9. shryock and Shryock, *Methods and Materials of Demography*.
10. Shukla, B.R.K. & Rastogi, S., *Physical Anthropology and Human Genetics - An Introduction*.



11. McKusick, V.A., *Human Genetics*.
12. Li, C.C., *Human Genetics*.
13. Malhotra, K.C. & ISHG, Calcutta, *Statistical Methods in Human Population Genetics*, IBRAD, ISI.
14. Wright, S., *Evolution and Genetics of Population*.
15. Harrison, G.A. & A.J. Boyce, *Structure of Human Population*.
16. Stanfield, W.D., *Theory and Problems of Genetics*.
17. Bhamarh, H.S. & Chaturvedi, C.M., *A Textbook of Genetics*.

**AN-BA. C. 522 Laboratory Based Practical -I**

1. Advanced practicals in serology: ABO, MN, and Rh systems,
2. ABH secretion in the saliva
3. Hemoglobin estimation
4. Sickle cell trait detection
5. PTC and colour-blindness
6. Midphalngial hair, Hypertrichosis of the ear
7. Estimation of allele frequencies for autosomal genes- Rh and MN loci
8. Estimation of allele frequencies for sex-linked genes- Colourblindness locus
9. Estimation of allele frequencies for multiple allelic locus-ABO blood group locus
10. Statistical test for equilibrium frequencies
11. Pedigree analysis

**AN-BA. C. 522 Laboratory Based Practical -II**

1. Introduction: Historical development of physical anthropology; Relevance of craniometry, craniology and osteometry in physical anthropology; Normal and abnormal variations.
2. Basic instruments especially used for craniometry and osteometry; Craniometric measurements: About 30 measurement taken directly covering linear, transverse, arcs, chords and circumference measurements on crania.
3. Measuring directly and indirectly at least 5 angles on crania. Calculation of at least two cranial indices. Observations of a few traits on crania: supra orbital ridges, pterion, nuchal lines.
4. Mandibulometry: At least 8 direct measurements on mandibles, teeth

5. Dermatoglyphics: Topography of palm and sole, Methods of taking palm, finger and sole printings, Galton and Henry systems of analysis - Dermatoglyphic patterns on fingers and palm, Main Line Formulae and indices, atd and other angles

**Recommended Readings:**

1. Frazer, *Human Anatomy.*
2. Singh, I.P. and Bhasin, M.K. *Anthropometry.*
3. Weiner and Lourie, *Human Biology - A Guide to Field Methods.*
4. Steward, T.D., *Hrdlicka's Practical Anthropology.*
5. Cummins, H. and Midlo, C., *Dermatoglyphics - An introduction to fingerprints, palms and soles*

**AN-BA. C. 523 Dissertation Writing and Viva**

The dissertation shall be based on the data collected by the candidate in the course of a month-long fieldwork conducted during third semester. Dissertation is to be prepared by the student under the supervision of the concerned teacher. The student is required to submit the dissertation through the supervising teacher to the Head of the Department for its evaluation at least fifteen days in advance of the date notified for examination. The dissertation shall be evaluated by an external examiner in consultation with the internal examiner (the supervising teacher). The candidate shall be awarded grade on the basis of his/her dissertation and performances in the viva-voce.

**Elective Courses for Physical/Biological Anthropology Specialization  
(For paper AN-BA. E. 524 and AN-BA. E. 525)**

**E 3. Growth and Nutrition**

**Unit I** Human growth and development: pre-natal and post-natal- definition; history of growth studies; pattern of growth: Infancy, childhood Juvenile, adolescence, adulthood, senility- human growth curves; - basic methods of growth studies- cross sectional; longitudinal, mixed longitudinal

**Unit II** Factors for/or against growth - Genetics of growth, heredity and environment, concept of age - chronological, skeletal, dental, morphological and based on body size; changing human growth patterns, secular trend.

**Unit III** Nutrition: Socio-cultural attributes of foods, hot, cold, preferences and avoidances, nutrition, nutrients: malnutrition, undernutrition, overnutrition, obesity. Types, functions and uses of nutrients; broad view, special problems related to growth and nutrition.

**Unit IV** Groups at risk: infants, pregnant and lactating mothers , old age problems, birth weight variation. Determinants of nutritional levels: anthropometrics, clinical signs, biochemical test

### **Recommended Readings:**

1. Harrison et al Human Biology
2. Tanner J. M. Fetus into Man
3. Jelliff D. B. Community Nutritional Assessment with Special Reference to Less Developed Countries.
4. Dixit Human Nutrition: Principles and Applications in India
5. Shanti G. Nutrition and Child Care: A Practical Guide
6. Watson and Lowery Growth and Development of Children
7. B. Srilaxmi Nutrition Science
8. Gopalan, C. Nutritive value of Indian Foods
9. Swaminathan, M. Essentials of Food and Nutrition: Applied Aspect
10. Margart Schay Nutrition
11. Rao, V.K.R.V. Food Nutrition And Poverty.
12. Nelson A Text Book of Pediatrics
13. Garrow, J.S and James, W.P.T: Human Nutrition and Dietetics

### **4. Applied Biological Anthropology-II**

**Unit I** Compatible and incompatible mating in respect to ABO and Rh blood groups and their consequences.

**Unit II** Gene and environment interaction: Twin studies, Heredity-environment interaction - different approaches.

**Unit III** Methods of positive and negative eugenics: Genetic engineering, eugenics, Medico legal application of human genetics

**Unit IV** Society and genetic diseases: Knowledge, attitude and curing practices. Genetic counseling approaches.

### Recommended Readings:

1. Cavalli-Sforza, L.L. & Bodmer, W.F., *The Genetics of Human Populations.*
2. Crow, J.F. & Kimura, M., *An Introduction to Population Genetic Theory.*
3. Stern, C., *Principles of Human Genetics.*
4. Winchester, A.M., *Human Genetics.*
5. Giblett, E.R., *Genetic Markers in Human Blood.*
6. Bhende and Kanitkar, *Principles of Population Studies.*
7. Cox, Peter, *Demography.*
8. Houser & Duncan, *The Study of Population.*
9. Shryock and Shryock, *Methods and Materials of Demography.*
10. Shukla, B.R.K. & Rastogi, S., *Physical Anthropology and Human Genetics - An Introduction.*
11. McKusick, V.A., *Human Genetics.*
12. Li, C.C., *Human Genetics.*
13. Malhotra, K.C. & ISHG, Calcutta, *Statistical Methods in Human Population Genetics*, IBRAD, ISI.
14. Wright, S., *Evolution and Genetics of Population.*
15. Harrison, G.A. & A.J. Boyce, *Structure of Human Population.*
16. Stanfield, W.D., *Theory and Problems of Genetics.*