

- Differentiation between serous, mucous and mixed acini
- Identification of lymphoid tissue under the microscope
- Microanatomy of lymph node, spleen, thymus, tonsil and correlation of structure with function

**Topic: Bone and Cartilage (AN71.1 to AN71.2)**

- Identification of bone under the microscope
- Types and structure-function correlation of bone
- Identification of cartilage under the microscope
- Types and structure function correlation of cartilage

**Topic: Integumentary System (AN72.1)**

- Identification of skin and its appendages under the microscope
- Correlation of structure and function

**C. GENETICS****Topic: Chromosomes (AN73.1 to AN73.3)**

- Structure of chromosomes with classification
- Technique of karyotyping with its applications
- Lyon's hypothesis

**Topic: Patterns of Inheritance (AN74.1 to AN74.4)**

- Various modes of inheritance with examples
- Pedigree charts for the various types of inheritance
- Examples of diseases of each mode of inheritance
- Multifactorial inheritance with examples
- Genetic basis and clinical features of achondroplasia, cystic fibrosis, vitamin D resistant rickets, haemophilia, Duchenne's muscular dystrophy and sickle cell anaemia\*

**Topic: Principle of Genetics, Chromosomal Aberrations and Clinical Genetics (AN75.1 to AN75.5)**

- Structural and numerical chromosomal aberrations
- Mosaics and chimeras with examples
- Genetic basis and clinical features of Prader Willi syndrome, Edward syndrome and Patau syndrome\*
- Genetic basis of variation: polymorphism and mutation
- Principles of genetic counselling

**D. GENERAL EMBRYOLOGY****Topic: Introduction to embryology (AN76.1 TO AN76.2)**

- Stages of human life

- Terms - phylogeny, ontogeny, trimester, viability

**Topic: Gametogenesis and fertilization (AN77.1 to AN77.6)**

- Uterine changes occurring during the menstrual cycle
- Synchrony between the ovarian and menstrual cycles
- Spermatogenesis and oogenesis
- Stages and consequences of fertilization
- Anatomical principles underlying contraception
- Teratogenic influences; fertility and sterility, surrogate motherhood, social significance of "sex-ratio"\*

**Topic: Second week of development (AN78.1 to AN78.5)**

- Cleavage and formation of blastocyst
- Development of trophoblast
- Process of implantation and common abnormal sites of implantation
- Formation of extra-embryonic mesoderm and coelom, bilaminar disc and prochordal plate
- Abortion, decidual reaction, pregnancy tests

**Topic: 3rd to 8th week of development (AN79.1 to AN79.6)**

- Formation and fate of the primitive streak
- Formation and fate of notochord
- Process of neurulation
- Development of somites and intra-embryonic coelom
- Embryological basis of congenital malformations, nucleus pulposus, sacrococcygeal teratomas, neural tube defects
- Diagnosis of pregnancy in first trimester\*
- Role of teratogens, alpha-fetoprotein\*

**Topic: Fetal membranes (AN80.1 to AN80.7)**

- Formation, functions and fate of chorion, amnion, yolk sac, allantois and decidua
- Formation and structure of umbilical cord
- Formation of placenta, its physiological functions, foeto-maternal circulation and placental barrier
- Embryological basis of twinning in monozygotic and dizygotic twins
- Role of placental hormones in uterine growth and parturition
- Embryological basis of estimation of fetal age\*
- Types of umbilical cord attachments\*

**Topic: Prenatal Diagnosis (AN81.1 to AN81.3)**

- Methods of prenatal diagnosis
- Indications, process and disadvantages of amniocentesis
- Indications, process and disadvantages of chorion villus biopsy