

## 10. KAUMARBHRITYA-BALA ROGA

**Theory- 400 Marks (100 Each)**  
**Practical and Viva-Voce - 100 Marks**  
**100 Marks**

**PAPER – I**

### BIJA, GARBHA VIGYANIYA (HUMAN GENETICS, EMBRYOLOGY)

#### **Part A**

1. Ayurvedic genetics with modern interpretations: Shukra, Shonita, Shukra Shonita Doshas, Bija-Bijabhaga-Bijabhagavayava Vikriti, Matrija and Pitraja Bhavas, Yajjah Purushiya and Atulyagotriya; Measures for obtaining good progeny.

2. Human genetics

#### Basic concepts:

- Cell, cell division, nucleus, DNA, chromosomes, karyotype, molecular and cytogenetics, structure of gene, and molecular Screening.
- Human Chromosomes - Structure, number and classification, methods of chromosome preparation and banding patterns.
- Single gene pattern inheritance: Autosomal & Sex chromosomal pattern of inheritance, Intermediate pattern and multiple alleles, Mutations, Non Mendelian inheritance, mitochondrial inheritance, Genomic imprinting, parental disomy.
- Criteria for multi-factorial inheritance.

#### Pathogenesis

- Pathogenesis of chromosomal aberrations and their effects, recombinant DNA, genetic inheritance, inborn errors of metabolism
- Chromosomal abnormalities: Autosomal & Sex chromosomal abnormalities and syndromes
- Multifactorial pattern of inheritance: Teratology, Cancer Genetics - Haematological malignancies, Pharmacogenetics.
- Chromosomal disorders
- Chromosomal aberration (Klinefelter, Turner and Down's syndrome)
- Genetic Counseling, Ethics and Genetics.

#### **Part B.**

1. Garbha, Garbhawastha, sperm, ovum, spermatogenesis, oogenesis, structure of ovum.
2. Sperm in the male genital tract, sperm in the female genital tract, activation and capacitation of sperm.
3. Garbha Masanumasika Vriddhi evam Vikasa (Ayurvedic and modern concepts of Embryo and Fetal development)
  - First week of development
  - Second week of development
  - Third week of development
  - Fourth to eighth week of development.
  - Development from third month till birth.
4. Formation of Prakriti and their assessment in Bala, Kumara, Yauvana. Pathya-Apathya according to Prakriti.
5. Aparā (Placenta) Aparā Nirmana (Formation of placenta), Aparā Karya (Functions of placenta); Aparā Vikara (Placental abnormalities).
6. Nabhinadi (Umbilical Cord).
7. Formation and features of umbilical cord.
8. Garbha Poshana ( Nutrition) from conception to birth.
9. Yamala Garbha( twins).

10. Garbha Vriddhikara Bhavas.
11. Garbhopaghatkara Bhavas; Effect of maternal illness, medication and diet over fetus.
12. Perinatal Care and Perinatal complications.
13. Scientific study of Jataharini.
14. Prenatal diagnosis.
15. Samanya Janmajata Vikara (Common congenital anomalies of different systems):  
Causative Factors (Beeja, Atamakarma, Ashaya, Kala etc.) Sahaja Hridaya Vikara (Congenital Cardiac Disorders) Jalashirshaka (Hydrocephalus), Spina bifida, Meningocele, Meningomyelocele, Khandaoushtha (cleft lip), Khanda-Talu (cleft palate), Sanniruddha Guda (Anal stricture / imperforated anus), Pada-Vikriti (Talipes equinovarus and valgus), Tracheoesophageal Fistula (TOF), Pyloric Stenosis.

**PAPER-II**

**100 Marks**

**NAVAJATA SHISHU VIGYANA EVAM POSHANA**

**PART-A**

1. Navajata Shishu Paribhasha, Vargikarana.
2. Navajata Shishu Paricharya evam Prana-Pratyagamana.
3. Samanya Navajata Shishu Paricharya (General Neonatal Care—Labour room onwards).
4. Samaya purva evam Samaya pashchat Jata Shishu Paricharya (Management of preterm, post term and IUGR newborn).
5. Prasava Kalina Abhighataja Vyadhi (Birth injuries): Upashirshaka (Caput Succedaneum, cephalohematoma), Bhagna (Fractures), Mastishkantargata Raktasrava (ICH, IVH, Subdural hemorrhage).
6. Navajata Shishu Parikshana (Examination of new born): Ayu Parikshana (including Lakshanadhyaya) Modern approach of Neonatal Examination including assessment of gestational age.
7. Kumaragara

**PART-B**

1. Navajata Shishu Vyadhi (Early neonatal disorders): Hypothermia, Shwasavarodha (Asphyxia Neonatorum/Respiratory distress), Ulvaka (Aspiration pneumonia), Rakta Vishamayata (Neonatal septicemia), Kamala (Neonatal Jaundice), Akshepaka (Neonatal convulsion), Pandu (Anemia), Atisara (Diarrhea), Asamyak Nabhinala kartanajanya vyadhi.
2. Navajata Kshudra Vikara (Minor neonatal ailments): Chhardi (Vomiting), Vibandha (constipation), Udara shula (Infantile colic), Puya Sphota (Pyoderma), Shishu Netrabhishyanda (Ophthalmia neonatorum).
3. Sadyojatasya Atyayika Chikitsa (Management of neonatal emergencies): Shock, Fluid and electrolyte imbalance, Convulsion, Hemorrhagic diseases of Newborn etc.
4. Procedures: Shiro-Pichu, Abhyanga, Parisheka, Pralepa, Garbhodaka Vamana (Stomach wash), Ashchyotana, Neonatal resuscitation, Collection of Blood sample, Intravenous canalization, Umbilical vein catheterization, Bone marrow aspiration, Phototherapy, Naso-Gastric tube insertion, Urethral catheterization, Exchange blood transfusion, Thoracocentesis, Bone marrow infusion, Lumbar puncture.

**BALROGA (PEDIATRIC DISORDERS)****PART-A**

1. Disorders of Pranvaha Srotas (Respiratory disorders)- Kasa (Cough), Shwasa (Respiratory distress Syndrome), Tamaka Shwasa (Childhood Asthma), Bronchiolitis, Shvasanaka Jwara (Pneumonia- bacterial, viral etc) Rajyakshma (Tuberculosis), Vaksha-Puyata (Pyothorax), Vaksha Vata-Purnata (Pneumothorax).
2. Disorders of Annavaha Srotas (Gastrointestinal disorders): Jwara (Fever), Chhardi (Vomiting) Ajirna (Indigestion), Kshiralsaka, Atisara (Diarrhea), Pravahika, Vibandha (Constipation), Udarshula (Pain in abdomen), Guda bhramsha (Rectal prolapse).
3. Disorders of Rasa evam Raktavaha Srotas (Hematological and circulatory disorders): Pandu (Anemia) and Raktapitta (Bleeding disorders), Vishishta Hridroga (Specific cardiac diseases), Hypertension, Leukemia.
4. Disorders of Mansavaha Srotas: Myopathies
5. Disorders of Mutravaha srotas (disorders of Urinary System): Vrikkshotha (Glomerulonephritis and nephrotic syndrome), Mutrakrichra (Dysuria), Mutraghata (Anuria).
6. Disorders of Vatavaha Sansthana (disorders of Nervous system) : Apasmara (Epilepsy), Mastulunga-Kshaya, Mastishka-Shotha (Encephalitis), Mastishkavrana-Shotha (Meningitis).
7. Disorders of Manovaha Srotas : Breath holding spell, Shayya mutra (Bed wetting), Autism, ADHD (Attention Deficit and hyperactive disorders), Learning Disability, Mental retardation, Temper tantrum, Pica.

**PART-B**

1. Antahsravi evam Chayapachayajanya Vyadhi (Endocrine and Metabolic disorders).
2. Kuposhanjanya Vyadhi (Nutritional disorders): Karshya-Phakka-Balshosha-Parigarbhika (PEM and allied disorders), Deficiency disorders of Vitamins, minerals and trace elements, Hypervitaminosis.
3. Krimi evam Aupsargika Vyadhi (Infestations and Infections):Krimi (Giardiasis and intestinal helminthiasis,Amoebiasis) Common bacterial, viral infections with special reference to vaccine-preventable diseases: Rohini (Diphtheria), Whooping cough, Aptanaka (Tetanus including neonatal tetanus), Romantika (Measles), Karnamula Shotha (Mumps), Rubella, Masurika (Chickenpox), Antrika Jwara (Typhoid and Paratyphoid), Viral Hepatitis, Vishama Jwara (Malaria), Kala-azar, Dengu fever, HIV (AIDS), Poliomyelitis, Chickengunia.
4. Tvak Vikara (Skin disorders): Ahiputana (Napkin Rashes), Shakuni (Impetigo), Sidhma, Pama, Vicharchika, Charmadal (Infantile atopic dermatitis), Gudakutta.
5. Anya Vyadhi (Miscellaneous disorders): Jalodara (Ascites), Gandamala, Apachi (Cervical lymphadenitis), Kukunakadi Akshi Roga, Hodgkin & non-Hodgkin Lymphoma, Abnormal growth patterns, Short stature , Niruddha prakasha (Phimosis), Paridagdha Chhavi, Utpullika.
6. Sanghata- Bala Pravrita Vyadhi (damstra): Dog bite, Snake bite, Scorpion bite etc
7. Atyayika Balarog Prabandhana (Pediatric emergency management): Shock and Anaphylaxis, Fluid and electrolyte management, Drowning, Foreign body aspiration, Status epilepticus, Acute hemorrhage, Acute renal failure, Febrile convulsion, Status asthmaticus, Burn, Acute Poisoning
8. Balagraha: Scientific study of Bala Graha and its management.

**BALAPOSHNA, SAMVARDHANA (NUTRITION, GROWTH AND DEVELOPMENT) AND  
RECENT ADVANCES IN KUAMABHRITYA**

**Part A****50 Marks**

1. Growth and development – Mile stones of growth and development and its pathological consideration in children.
2. Child psychology and its implication on personality development.
3. Common adolescent health problems and its management.
4. Management of pediatric disabilities and rehabilitation.
5. Nutrition:
  - A. Navjata Shishu Ahara (Neonatal feeding):

Specific feeding methodology as per Ayurveda and recent advances. Fluid, milk and calory requirement for the newborn, feeding technique for the preterm baby. Stanyotpatti and Prasruti (physiology of Lactation), Stanya Sanghatana (Composition of breast milk), Stana Sampat (Characteristics of normal breast), Stanya Sampat evam Mahatva (Properties & importance of breast milk), Stanya-Piyusha (Colostrum); Stanya-Pana-Vidhi (Method for breast milk feeding), Stanyakshaya / Stanyanasha (Inadequate/ absence of breast milk), Stanya parikshana (Examination of breast milk), Stanyabhava Pathya Vyavastha (Alternative feeding in absence of breast milk), Total Parenteral Nutrition. Stanyadosha (Vitiation of Breast milk), Stanya Shodhana (Purification of breast milk), Stanya Janana and Vardhanopakrama (Methods to enhance breast milk). Dhatri (Wet nurse): Dhatri Guna and Dosha (Characteristics of Wet nurse), Concept of Breast Milk Banking. Lehana (Elucturies).

- B. Bala-Poshana (Child Nutrition):

Daily requirements of nutrients for infant and children Common food sources Satmya and Asatmya Ahara (Compatible and incompatible diet) Pathya evam Apathya Ahara (Congenial and non-congenial diet) Stanyapanayana (Weaning).

6. Concept of immunity and immune enhancing measures with special reference to suvarna prashana

**Part B**

1. Significant contributions of Kashyapa samhita, Arogya raksha Kalpadrum and other texts /treatises of Ayurveda such as Harita Samhita in the field of Kaumarbhritya including relevant parts from Brihatrai
2. Panchakarma: Principles of Panchakarma, and their application in pediatric practice.
3. Update knowledge of clinical pediatrics including recent researches in Kaumarbhritya.
4. Fundamentals of Hospital management with special emphases on Pediatrics.
5. Navajata Shishu Kaksha Prabandhana (Nursery management; Nursery plan, staff pattern, medical records.), Neonatal Intensive Care Unit, Visankramanikarana (sterlization), Knowledge of equipments used in nursery.
6. Drug and Doses in Pediatrics.
7. Scientific study of Bala Graha and its management.
8. Life Style disorders and its management – Obesity, computer vision syndrome etc.

**Practical/ Clinical Exposure (Record of exposures to be produced at the practical examination)**

1. Full term, preterm, post term new born baby care
2. Practical procedures like – phototherapy, premature baby care, venepuncture, cord blood sampling, stomach wash, suction, resuscitation, etc.

3. Practical skill of Pediatric Panchakarma procedures
4. Child Health Check up
5. IQ Assessment in Children
6. Exposure to National Health Programmes related to Children, including Immunization Program:-
7. Patient case Records (50 Records)
8. Practical knowledge of modern diagnostic tools (invasive & non invasive) and techniques used in pediatrics.
9. Management of common pediatrics emergencies.
10. Participation in UG teaching/training.
11. Minimum 15 days compulsory reciprocal exposures in Kaumarbhritya department of other institution during the study period.
12. Participation in National/international seminars.
13. Publication/acceptance of two research papers in indexed/peer reviewed/ISSN journals.

**Pattern of practical examination:**

**100 Marks**

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| 1. Case record                             | -15 Marks |
| 2. Bed side examination                    |           |
| a) Short Case                              | -15 Marks |
| b) Long Case                               | -25 Marks |
| 3. Identification of instruments/ spotting | -10 Marks |
| 4. Lecture/Dissertation Presentation       | -10 Marks |
| 5. Viva-voce                               | -25 Marks |

**Reference Books**

1. Kashyapa Samhita Complete Hindi translation by Satyapal Vidhyalankara English translation by Prof. Premvati Tiwari
2. Principles & practice of Pediatrics in Ayurveda: CHS Shastry
3. Child Health Care in Ayurveda: Abhimanyu Kumar
4. Ayurvedic Concepts of human Embryology: Abhimanyu Kumar
5. Kaumarbhritya by Prof. D.N. Mishra
6. Kaumarbhritya Ke Antargata Balgraho Ka Kramika Evam Vaigyanika Adhyana by Prof. Chanchal Sharma
7. Notes on Kaumarbhritya-by Dr. Dinesh K S
8. Pran - Pratyagamanam-by Dr. B.M. Singh
9. Ayurveda Dwara Matra Evam Shishu Paricharya by Dr. KS Patel, V.K. Kori & Rajgopal S
10. Kaumarbhritya related references from Charaka Samhita, Sushruta Samhita, Harita Samhita,Ashtang Sangrah, Ashtang Hridayam etc.
11. Clinical Methods in Paediatrics by Meharban Singh
12. Pediatrics Emergencies by Meharban Singh
13. Essential Pediatrics O.P. Ghai
14. Text Book of Pediatrics Nelson
15. Care of New Born by Meharban Singh
16. Human Embyology by Inderbeer Singh.
17. Human Genetics by Gangane.

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