

RAJASTHAN PUBLIC SERVICE COMMISSION, AJMER

SYLLABUS OF COMPETITIVE EXAMINATION FOR THE POST OF ASSISTANT PROFESSOR (Super Speciality) PAEDIATRICS SURGERY MEDICAL EDUCATION DEPARTMENT

Unit-I

- **History:** Birth and growth of paediatric surgery – overseas and in India.
- **Genetics:** Dymorphology, principles of genetic test for assessment, genetic disorders with surgical malformation, chromosomal aberrations, antenatal counseling, fetal surgery, prenatal diagnosis and therapeutics, fetal sampling.
- **Anatomy and embryology:** Development of fetus, differentiation of sex, anatomy of a newborn, infant, child, development of diaphragm, ano-uro-genital tract development and descent of testis, ventricular system and CSF circulation, development of tracheo-esophageal tubes and GE junction, development of small and large bowel, urinary bladder, kidney and ureter, vertebral column.
- **Teratology:** Principles and teratogens.

Unit-II

- **Physiology:** Deglutition, GE junction, gastric emptying and its problems, bilirubin metabolism, coagulation cascade, micturition, defecation, CSF circulation, deep tendon reflexes.
- **Fluid and electrolyte balance of fetus, newborn, infant and surgical child, acid base balance.**
- **Nutrition:** Assessment, requirements, metabolic response to stress, enteral feeding, TPN, gastrostomies, enterostomies, short gut syndrome, home parenteral nutrition.
- **Relevant neonatology:** Acid base balance, jaundice, kernicterus, exchange transfusion, hypoglycemia, hypomagnesaemia, hypocalcaemia.

Unit-III

- **Management of critically ill child:** Invasive and noninvasive monitoring and principles of management of shock.
- **Anaesthesia:** Types of anaesthesia, perianaesthetic management, principles of pediatric anaesthesia, regional anaesthesia, postoperative pain, newer drugs available.
- **Respiratory support:** Causes of respiratory failure, respiratory support options and techniques, types of ventilators, principles of ventilatory support, complications of ventilatory support, acute and chronic respiratory failure, Neonatal Ventilation, ECMO.

Unit-IV

- **Surgical Infections:** Causes, components, immunodeficiency states, AIDS, neonatal sepsis, antibiotics, B Cell, T Cell, component, phagocyte deficiency states.
- **Hematological diseases:** Hemolytic and Non-Hemolytic anemia, thrombocytopaenic purpura, ITP, hereditary spherocytosis, Thalessemia, Hemophilia, Co-agulation disorder, transfusion therapy, blood components, blood substitutes.
- **Parasitology:** E. Histolytica, ascariasis, E. Granulosis, Ankylostomata duodenale, Bilharziasis, Elephantiasis.
- **Wound Management in Paediatric age group.**

Unit-V

- **Imaging Modalities:** Plain X-Ray, U.S.G., I.V.P., M.C.U., Barium studies, Color Doppler, DTPA, DMSA, MAG-3 Scan, PET Scan, Manometry, M.R.I., C.T. Scan.
- **Trauma:** Assessment and management of a child as an accident victim, triage and principles of stabilization, child abuse, Principles and management of Blunt and Penetrating Trauma, Thoracic and Abdominal Trauma, Genitor-Urinary injuries, soft tissue injuries, Skeletal injuries, Hand Injuries, Insect and Snake Bites, Vascular Injuries, Birth Injuries and Burns.

Unit-VI

- **Malignancies:** Knowledge of common tumors (Hodgkin's and non Hodgkin's lymphoma, Teratoma, Rhabdomyosarcoma, Neuroblastoma, Wilms Tumor, Liver Tumors, Ovarian Tumors and Cysts, Testicular Tumors, Round Cell Sarcoma, PNET), Principles and their Management in terms of Surgery, Chemotherapy and Radiotherapy. Recent advances in Paediatric Malignancies.

Unit-VII

- **Head and Neck:** Craniofacial Anomalies, Cleft lip and Cleft Palate, Choanal atresia, Congenital anomalies of lip, Injuries of lip, Vascular malformation of lip and jaw, Lesions of tongue and oral cavity, Oro-Cervico-Pharyngeal Teratomas, Cervical Lymphadenitis, Congenital problems of thyroid gland, Diseases of parathyroid, Cystic hygromas, Cysts and sinuses in the neck, Torticollis, Cervical esophagostomy, Carotid Body Tumor, Sternomastoid tumors.

Unit-VIII

- **Chest:** Congenital Diaphragmatic Hernias, Cysts and Tumors in Mediastinum, Tracheostomy, Obstruction of upper and lower airways, lobar emphysema, pulmonary lesions, pulmonary agenesis, aplasia, Lung Cysts, Sequestration, Bronchopulmonary Dysplasia, Chylothorax.
Suppurative, Mycobacterial Parasitic Infections of lungs, pleura, and mediastinum, Empyema, Esophageal perforation.
- **Esophagus:** Esophageal atresia and associated malformation, congenital stenosis and corrosive strictures, GER, Neuromotor dysfunction, Replacement of esophagus.

Unit-IX

- **Abdomen:**
 - Umbilical embryology, Umbilical Diseases, Remnants of Vitello-Intestinal and Urachus, Omphalocele, Exomphalos major and minor, Gastroschisis, Cloacal exstrophy.
 - Stomach and its related conditions: IHPS, Volvulus, Perforations, Bezoars, Microgastria, Gastrostomy.
 - Duodenum: Atresia, Stenosis, Annular pancreas.
 - Jejunioileal atresia and Stenosis.
 - Meconium ileus and cystic fibrosis.
 - Meckel's diverticulum
 - Intussusception.
 - Intestinal malrotation: Bands and Adhesions – congenital and postoperative.
 - G.I. Bleeding.
 - Foreign bodies and bezoars and alkaline disc batteries.
 - Duplications of G I Tract.
 - Mesenteric and omental cysts.
 - Ascites, fetal, chylous, pancreatic, biliary, urinary, ovarian.
 - Meconium peritonitis.
 - Polypoid disease of the G I Tract.
 - Necrotizing enterocolitis.
 - Ulcerative colitis.
 - Primary peritonitis.
 - Ileostomy, Jejunostomy and colostomy.
 - Atresia, stenosis and other obstructions of the colon.
 - Appendicitis.
 - Hirschsprung's disease and its management.
 - Neonatal intestinal dyskinesias, neuropathies and myopathies of the colon, total colonic aganglionosis, Colorectal Tumors.

Unit-X

- **Anorectal malformation:** Constipation, incontinence, prolapse and Anorectal trauma.

Unit-XI

- **Hepato-Biliary Disease:**
 - The jaundiced infant and biliary outflow obstruction, EHBA.
 - Choledochal cyst, benign and malignant liver and gall bladder.
 - Cholecystitis and cholelithiasis.
 - Portal hypertension: Budd Chiari syndrome, hepatic venous outflow obstruction.
 - Pancreas: Hypoglycemia, MEA, Pseudocyst and tumors of pancreas, pancreatitis.
- **Spleen:** Functions, post splenectomy sepsis, trauma, techniques of resection.

Unit-XII

- **Uro – Genital System – K.U.B. :**
 - Adrenal Gland, Physiology, Pheochromocytoma, cortical lesions, adrenal insufficiency, hyperaldosteronism, secretory tumors.
 - Cystic diseases of kidney, Dysplasia and Agenesis of Kidney.
 - Renal fusions and ectopia.
 - Congenital and acquired pelviureteral junction obstructions.
 - Duplications and ureterocele.
 - Megaureter.
 - Vesico Ureteral Reflux, Posterior Urethral Valves, Anterior Urethral Valves, Urethral Duplication, Megalourethra.
 - Prune belly syndrome.
 - Neuropathic bladder and enuresis.
 - Urodynamics.
 - Exstrophy of urinary bladder.
 - Diversions and undiversions.
 - Augmentation and bladder substitution.
 - Hypospadias and abnormalities of urethra.
 - Epispadias.
 - Abnormalities of penis and scrotum.
 - Abnormalities of female genital tract.
 - Ambiguous Genitalia.
- **Testis :** Undescended Testis, Tumor, Torsion, Varicocele and other abnormalities.

Unit-XIII

- **Anomalies of Cranium and Spine:** Anencephaly, Encephalocele, Hydrocephalus, Craniosynostosis, Spina Bifida.

Unit-XIV

- **Skin and Soft Tissue Lesions:** Hamartomatous lesions of Skin, Pigmented Soft Tissue Lesions, Tumors of Muscles Tissue Origin, Neurofibromatosis.
- **Lymphatic Disorders:** Lymphangioma, Cystic Hygromas, Mesenteric Cyst, Chylous Ascites, Intestinal Lymphangiectasia, Lymphedema.
- **Vascular Disorders:** Hemangiomas and A. V. Malformations.

Unit-XV

- **Minimal Access Surgery (Diagnostic & Therapeutic):** Endoscopy, Bronchoscopy, Oesophagoscopy, G I Endoscopy, Thoracoscopy, Laparoscopy.
- **Robotic Surgery.**

Unit-XVI

- **Monoclonal Antibodies and relevant immunology.**
- **Stem Cells**

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Pattern of Question Papers:

1. **Objective Type Paper**
2. **Maximum Marks: 150**
3. **Number of Questions: 150**
4. **Duration of Paper: 2.30 Hours**
5. **All Questions carry equal marks**
6. **There will be Negative Marking**

(For every wrong answer one-third of the marks prescribed for that Particular question shall be deducted.)