



M.Ch Paediatric Surgery
Curriculum and Syllabus 2014
Branch Code: 405

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M.Ch Paediatric Surgery

1. A. Goals: -

The aim of teaching post graduate in paediatric surgery is to prepare them to have adequate knowledge in the subject, covering both theoretical and practical knowledge in accordance with institutional goals.

B. Objectives:-

1). Knowledge:

At the end of the course upon successful completion of training on passing the examination the student is expected to

- a. Acquire comprehensive knowledge of the basics of paediatric surgery including all allied specialties related to paediatric surgery like Embryology, Genetics, Basic Anatomy, Physiology, Biochemistry, Pharmacology, Pathology, Radio-imaging, Newborn surgery, Paediatric Urology and Paediatric Neurosurgery and also Laparoscopic surgery.
- b. Possess complete knowledge of the commonly used diagnostic test like Plain X-ray, Ultrasound, CT and MRI.
- c. Possess knowledge about recent advances in the subject of Paediatric surgery and all its allied specialties. Working knowledge of the sophisticated and routine equipments, consumables used in paediatric surgery.
- d. Possess adequate knowledge of principles of research work in the field of paediatric surgery in both Clinical and experimental field with the ability to analyse the data.
- e. Acquire knowledge in the performance and interpretation of special investigations like Cystoscopy, laparoscopy.
- f. Acquire knowledge in common paediatric investigations such as CT scanning, MRI scanning, MRA, DSA and Single Photon Emission Computerised Tomography

2).SKILLS

a. Diagnose and management of majority of the conditions in the speciality of Paediatric surgery on the basis of clinical assessment, and appropriate investigations.

b. Possess complete Clinical diagnostic Skills for the recognition of common Paediatric Surgical conditions.

c. Acquire skills in the performance and interpretation of special investigations such as MRI, Barium enema, MCUG, IVP, Ultrasound, CT, Barium series, Doppler study, Sialogram.

d. Acquire skills in invasive procedures like Cystoscopy, gastroscopy, Lumbar puncture, intrathecal, Central venous access with chemotherapy administration.

e. Acquire exposure in sophisticated procedures like Hydrostatic reduction for Intussusceptions and intra lesional injections.

f. Able to apply sound clinical judgment and rationale cost effective investigations for the diagnosis and management of paediatric surgery cases in OPD, Wards, Emergency Room and Intensive care unit.

g. Be able to teach the Postgraduate Students MS General surgery and MD Paediatrics

h. Be able to perform Clinical and Investigative studies and to present in Seminars, meetings and conferences etc.

i. Have the ability to organize specific teaching and training programmes for para-medical staff, associated professionals and patient education programmes.

j. should be able to develop good communication skills and give consultations to all other departments of the hospital.

h. Demonstrate skills in documentation of individual case details as well as morbidity data relevant to the assigned situation.

k. Demonstrate empathy and humane approach towards patients and their families and exhibit interpersonal behavior in accordance with the social norms and expectation.

l. Develop skills as self-directed learner, recognize continuing educational needs: select and use appropriate learning resources.

m. Develop skills in using educational methods and techniques as applicable to the teaching of medical/nursing student, general physicians and paramedical health workers.

COURSE OVERVIEW

DURATION OF THE COURSE

The period of the certified study and training for the post-graduate M.Ch Paediatric Surgery shall be three academic years (six academic terms). The academic terms shall mean six months training period.

COMMENCEMENT OF ACADEMIC COURSE

The academic session for the post-graduate shall commence from August/September of the Academic year.

DATE OF EXAMINATION

The candidates admitted up to 30th September of the academic year shall be registered for that academic year and shall take up their Final Third Year regular examination in August/September of the due year and February/March of the academic year after completion of three(3) years.

NUMBER OF EXAMINATIONS

The University shall conduct not more than two examinations in a year, for any subject, with an interval of not less than 4 and not more than 6 months between two examinations.

ATTENDANCE

All students joining the postgraduate training programme shall work as full time residents during the period of training, attending not less than 80% (eighty percent) of the training during each calendar year, and will be given full time responsibility, assignments and participation in all facets of the educational process.

The Period of training for obtaining the degrees shall be three completed years including the period of examination.

The Curriculum & Syllabus

METHODOLOGY OF THE CURRICULUM

Cognitive:

1. Seminars to review a subject.
2. Journal clubs to review relevant articles.
3. Tutorials with consultants and guest lectures
4. Providing a well- stocked library.

Improving clinical judgment:

1. Comprehensive teachings ward rounds.
2. Treatment planning sessions.
3. Collaboration with paediatricians, pathologist, oncologist, anesthesiologist and plastic surgeons
4. Surgical audit – monthly morbidity and mortality meeting
5. Where a department is deficient in a sub-specialty of paediatric surgery, it is mandatory that the trainee spends 3 months in a department having the sub-specialty under supervision of the consultant

Developing Skills:

1. Develop daily departmental program including emergencies.
2. Graduated increasing responsibility.
3. Knowledge of clinical photograph/documentation.
4. Knowledge of clinical epidemiology.

Develop critical faculties:

1. Maintain records and analyze data.
2. Presentations at clinical meetings, conferences.
3. Written scientific papers
4. Thesis- research and investigate with limited objective clinical problems.
5. Ethical basis of practice of paediatric surgery

Detailed Syllabus – MCh Paediatric Surgery

PART I GENERAL

1. Molecular Genetics and Gene Therapy
2. Clinical Genetics
3. The Fetus as a Patient
4. The Newborn as a Surgical Patient including metabolic considerations
5. Respiratory Physiology and Care
6. Extra Corporeal Life Support in Cardiopulmonary Failure
7. Cardiovascular physiology and Care
8. Sepsis and related considerations
9. Surgical implications of Hematological disease
10. Nutrition
11. Paediatric anesthesia
12. Ethical and Legal considerations in Paediatric surgery

PART II TRAUMA

13. Infants and Children as Accident victims and their Emergency management
14. Thoracic injuries
15. Abdominal trauma
16. Genitourinary tract trauma
17. Early evaluation and management of hand, soft tissue and Envenomation injuries
18. Musculoskeletal trauma
19. Central Nervous System Injuries
20. Vascular injuries
21. Treatment of Burns
22. Special Consideration in Trauma: Child Abuse and Birth injuries

PART III MAJOR TUMORS IN CHILDHOOD

23. Principles of paediatric oncology
24. Biopsy techniques for children with cancer
25. Wilms Tumor
26. Neuroblastoma
27. Liver Tumors
28. Rhabdomyosarcoma
29. Teratomas and other germ cell tumors
30. Non-Hodgkin's Lymphoma and Hodgkin's disease in Childhood and Adolescence
31. Common Bone tumors

32. Central nervous system tumors and vascular malformations
33. Ovarian Tumors
34. Testicular Tumors

**PART IV
TRANSPLANTATION**

35. Principles of transplantation
36. Kidney transplantation
37. Pancreatic transplantation
38. Liver transplantation
39. Intestinal transplantation
40. Heart and Lung transplantation
41. Surgical problems associated with bone marrow transplantation

**PART V
HEAD AND NECK**

42. Disorders of the eye
43. Craniofacial abnormalities
44. Cleft lip and palate
45. Otolaryngologic disorders
46. Salivary glands
47. Lymph node disorders
48. Thyroid/Parathyroid disorders
49. Cysts and Sinuses of the neck
50. Torticollis

**PART VI
THORAX**

51. Disorders of the breast
52. Congenital Chest wall deformities
53. Congenital diaphragmatic hernia and Eventration
54. Benign Mediastinal Cysts and Tumors
55. Laryngoscopy, Bronchoscopy, and Thoracoscopy
56. Lesions of Larynx and trachea
57. Respiratory problems related to the airway and lung
58. Disorders of the thoracic cavity and pleura and infections of the lung, pleura and Mediastinum
59. Tumors of the lung
60. Esophagoscopy and other diagnostic techniques
61. Esophageal rupture and perforation
62. Congenital Anomalies of the Esophagus
63. Caustic strictures of the Esophagus
64. Esophageal replacement
65. Disorders of Esophageal function

66. Gastro esophageal Reflux

**PART VII
ABDOMEN**

67. Disorders of the Umbilicus
68. Disorders of the abdominal wall
69. Inguinal Hernia and Hydrocele
70. Undescended Testis, Torsion and Varicocele
71. Hypertrophic pyloric stenosis
72. Peptic Ulcer and Other Conditions of the stomach
73. Duodenal Atresia and Stenosis
74. Jejunum-ileal Atresia and Stenosis
75. Meconium Ileus
76. Meckel's Diverticulum
77. Intussusception
78. Disorders of Rotation and Fixation
79. Miscellaneous causes of Intestinal Obstruction
80. Short-Bowel Syndrome
81. Gastrointestinal Endoscopy, Laparoscopy and other Non-invasive 1
Surgica Techniques
82. Gastrointestinal Bleeding
83. Gastrointestinal Duplications
84. Mesenteric and Omental Cysts
85. Ascites
87. Polypoid Disease of the Gastrointestinal Tract
88. Necrotizing Enterocolitis
89. Ulcerative Colitis
90. Primary peritonitis
91. Stomas of the Large and Small Intestine
92. Atresia, Stenosis and Other Obstructions of the Colon
93. Appendicitis
94. Hirschprung's Disease and Related Neuromuscular Disorders of the
Intestine
95. Anorectal Malformations
96. Other Disorders of the Anus and Rectum, Anorectal function
97. Colorectal Tumors
98. The Jaundiced Infant: Biliary Atresia and Other Obstructions
99. Choledochal Cyst
100. Gallbladder Disease and Hepatic Infections
101. Nonmalignant Tumors of the Liver
102. Portal Hypertension
103. The Pancreas
104. The Spleen
105. Adrenal Glands

PART VIII
GENITO-URINARY AND RELATED DISORDERS

106. Agenesis, Dysplasia and Cystic Disease
107. Renal Fusions and Ectopia
108. Congenital Anomalies of the Pyeloureteral Junction and the Ureter
109. Renal Infection, Abscess, Vesicoureteral Reflux, urinary Lithiasis and Renal Vein Thrombosis
110. Ureteral Duplication and Ureteroceles
111. Megaureter and Prune-Belly Syndrome
112. Diversion and Undiversion
113. Disorders of the Bladder Function
114. Structural Disorders of the Bladder Augmentation
115. Bladder Exstrophy
116. Hypospadiasis
117. Abnormalities of the urethra, Penis and Scrotum
118. Ambiguous Genitalia in the newborn
119. Abnormalities of the Female Genital Tract

PART IX
SPECIAL AREAS OF PAEDIATRIC SURGERY

120. Congenital Heart Disease and Anomalies of the Great Vessels
121. Management of Spina Bifida, Hydrocephalus, Central Nervous System Infections, and Intractable Epilepsy
122. Major Congenital Orthopedic Deformities
123. Bone and Joint Infections
124. Amputation Considerations in Childhood

PART X
SKIN, SOFT TISSUES, AND BLOOD VESSELS

125. Congenital Defects of the skin, muscles, Connective tissues, Tendons, and Hands
126. Tumors of the Soft Tissues
127. Conjoined Twins
128. Vascular Anomalies: Hemangiomas and Malformations
129. Arterial Disorders
130. Venous Disorders in Childhood
131. Lymphatic Disorders

INDEX FOR OPERATIVE CASES

1. Neonatal Surgical cases:

Esophageal Atresia and TEF
Anorectal malformations (low and high)
Exomphalos and Gastroschisis
Duodenal Atresia / obstruction
Diaphragmatic Hernia
Hirschsprung's disease (Colostomy and Primary Pull-through)
NEEC
Spina Bifida
Intestinal Obstruction (Atresia, Stenosis, Malrotation)
Congenital Hypertrophic Pyloric Stenosis
Meconium Ileus and Intestinal Volvulus
Neonatal tumors
Neonatal surgical jaundice
Bladder exstrophy
Prune Belly syndrome

2. Gastrointestinal surgical problems:

Colostomy making and closure
Esophageal replacement
Anti-gastro-esophageal reflux surgery
Gastrostomy
Pull through procedures for ARA
Pull through procedures for Hirschsprung's disease
Intestinal obstruction, resections
Intussusception
Splenectomy
Patent VID anomalies
Umbilical Hernia
Appendicectomy
Biliary Atresia
Choledochal cysts
Surgery on the pancreases (Pancreatitis, tumours, pseudocysts)

3. Paediatric Urological Cases:

Pyelolithotomy
Pyeloplasty
Ureteric re-implantation
Ureterolithotomy
Ureterostomy
Cystolithotomy

Cystoscopy
Nephrectomy
Nephrostomy
Orchidectomy for tumors, Exploration
Posterior urethral valve fulguration
Urinary diversion
Operation for torsion of testis
Circumcision
Orchidopexy
Hypospadiasis repair. Bladder augmentation/substitution procedures
Lower Urinary Tract Endoscopy
Cystourethroscopy
STING for Vesicoureteral Reflux
Bladder Injection procedures for Neurogenic bladder
Endoscopic Management of Ureterocele
Percutaneous Nephrolithotomy and endoscopic management of
Urinary Tract Calculi
Uretero-rensoscopy in Children
Minimally Invasive Management of Calculi

4. Paediatric Thoracic Case:

Oesophageal dilatation
Foreign body removal
Esophagoscopy
Pleural drainage
Pulmonary resection
Thoracotomy for excision of duplication Cyst, CCAM, tumor
Pneumonectomy
Decortication and pleural toilet

5. Paediatric Oncology Cases:

Hepatoblastoma
Neuroblastoma
Rhabdomyosarcoma
Wilm's tumour
Ovarian tumors
Testicular Tumors
Soft tissue sarcomas
Sacro-Coccygeal teratomas

6. Paediatric Endoscopic Procedures:

Cystoscopy
Bronchoscopy

Esophagoscopy

6. a - Minimal Access Surgery:

Minimal Access Surgery Applications in the Abdomen

Diagnostic and Therapeutic.

Laparoscopic appendectomy

Laparoscopic hernia surgery in children

Laparoscopic Heller myotomy

MAS-assisted percutaneous endoscopic gastrostomy & jejunostomy tubes placement

Laparoscopic fundoplication

Laparoscopic pyloromyotomy

Laparoscopic cholecystectomy

Laparoscopic of intestinal malrotation, intussusception, adhesiolysis, Meckel's diverticulum, and small-bowel atresia.

Laparoscopic pull-through for Hirschsprung disease

Laparoscopic management of anorectal malformations

Laparoscopic management of Nonpalpable undescended testes

Laparoscopic management of Varicocele

Laparoscopic management of Ovarian pathology

Laparoscopic splenectomy

Laparoscopic nephrectomy

Laparoscopic hepatobiliary surgery

Laparoscopic Assisted ACE Procedure for Fecal Incontinence in Children

Minimal Access Surgery Applications in the Thorax

Thoracoscopic procedures.

Diagnostic and Therapeutic.

Assessment and / or resection of mediastinal or lung masses.

Repair of Diaphragmatic Hernia & Eventration

Resection of sub pleural blebs

Pleurodesis

Pericardial drainage

Lung biopsies

Lung resections

Drainage of empyema & Decortication

Tumor biopsies

Sympathectomy

Repair of Esophageal atresia & T.E. Fistula

Excision of foregut duplication cysts & lung cysts (including hydatid cyst)

Minimal Access Surgery Applications in the Newborn

Thoracoscopic procedures

Repair of Esophageal atresia & T.E. Fistula

Repair of Diaphragmatic Hernia & Eventration
Biopsy of mediastinal or lung masses
Lobectomy for CLE & CCAM
Laparoscopic procedures
Laparoscopic pyloromyotomy
Laparoscopic management of Biliary atresia
Biopsy of abdominal masses
Excision of Choledochal cyst,
Ladd's procedure and reduction of intussusceptions
Pull-through for ARA and Hirschsprung's disease

7. General Paediatric Surgical cases:

Inguinal hernia
Circumcision
Venous Cut downs, abscess drainage, others Thyroglossal cysts
Excision of lymphangiomas and other soft tissue lesions

8. Paediatric Plastic Surgical cases:

Hypospadias
Cleft lip and Palate.
Release of syndactyly
Management of Congenital and Acquired Conditions Including Craniofacial Anomalies,
Hand Abnormalities and Vascular Anomalies

9. Paediatric neurosurgical cases:

Spina Bifida and Hydrocephalus.

B. Non-operative areas of Training:

The non-operative component of the structured M.Ch. training program in paediatric surgery is also equally important and should include:-

1. Technique of Resuscitation of the Newborn
2. PALS and NALS
3. ATLS
4. Antenatal diagnosis and counseling (intervention if possible)
5. Orientation with Internet and the Computer technology
6. Management of Day care Surgery
7. Paediatric Transplantation (Liver, Kidney, Pancreas)
8. Surgical Embryology, genetics and the gene therapy

9. Paediatric Chemotherapy regimens for solid tumours
10. Problems of babies with prematurity and small for date physiology of the Newborn and the Drug Schedules for the newborn, and the blood exchange transfusions
11. Organizational capabilities to host conferences, Symposia, workshops etc.
12. Membership of National and International Paediatric Surgical associations
13. Subscribing to the established journals in the specialty.
14. Knowledge about the progress made in Paediatric Surgery during the past few decades: Transplants, Endoscopy, Lasers, Laparoscopy, Tumor markers, antenatal diagnosis, gene therapy.
15. Regenerative Medicine & Stem Cell Therapy

TEACHING SCHEDULE:

FIRST YEAR:

During the first year, the student will be working fully with the department of paediatric surgery. In the morning time, he/she will be familiarized with clinical paediatric surgery and examination, localization and differential diagnosis, relevant laboratory and radiological investigations. He/She prepares the patient who is posted for surgery like all the relevant investigations for anesthetic fitness. In the first year he should assist cases in the theatre and document the operative procedure and should look after all the post operative cases. Regarding the minor cases like abscess he/she should do initially with seniors and later of the first year and can do individually. In the afternoon he/she will attend the basic science classes.

SECOND YEAR:

In the morning he/she should make ward rounds and daily progress of the cases should be recorded. Daily he/she should attend the OP and he can admit the relevant cases. In the ward rounds he can present the case. In the theatre he can operate individually if its day care surgery. In the afternoon he should attend the journal club, tumour meet.

THIRD YEAR:

During the period the student will work in paediatric surgery department, concentration on clinical and theoretical paediatric surgery. In theatre he can operate major cases individually with the supervision of seniors, he can do all examinations like Cystoscopy, gastroscopy.

Last two months in the third year will be given to go to any recognized paediatric centre in India.

Academic and Routine Activities:-

Monday to Friday 08:00-02:00pm

(Except Monday and Wednesday) → : OP department

Monday and Wednesday → : Operation day

Tuesday → : Grand rounds and
Case Discussions.

Thursday → : Specialty clinics
Constipation
Clinic;

Friday → : Academic case
Discussion
Continence clinic

Saturday → : Preparatory days
And log book
Verification

Inter-department discussion → : **Alternate
Thursdays**

In Seminar Hall

Radiology and Pathology

Maintenance of Log book

1. The Post graduate students shall maintain a record of day to day activities carried out by them and training program undergone including details of procedures carried out individually or assisted. They will also incorporate details of rare case discussed in the clinical discussions and references from the literatures for the rare case.
2. The students shall record the details of the journals they discussed in the journal club.
3. The logbook should contain various CME's conferences (National & International) attended by the student during the study period.
4. The Students Should record the teaching sessions and the topic discussed by the faculty during their visit to other centres of excellence during the second year

It is preferable that a post graduate student during the course to present one poster presentation and /or platform presentation at a national/state conference and /or to present one research paper which can be published/accepted for publication during the period of his/her postgraduate studies.

Thesis

Every student registered as post graduate shall carry out research project under the guidance of a recognized post graduate teacher, the result of which shall be written up and submitted in the form of a thesis.

Work for writing the Thesis is aimed at contributing to the development of a spirit of enquiry, besides exposing the student to the techniques of research, critical analysis, acquaintance with the latest advanced in medical science and the manner of identifying and consulting available literature.

The thesis shall be a bound volume of a minimum of 50 pages and not exceeding 75 pages of typed matter (Double line spacing and on one side only) including certification, acknowledgements, annexure and bibliography.

Thesis should consist of

- a. Introduction
- b. Review literature
- c. Aims and Objectives
- d. Materials and Method
- e. Result
- f. Discussion
- g. Summary and Conclusion
- h. Annexure
- i. Bibliography

Five copies of thesis shall be submitted six months prior to the commencement of the theory examinations on the date prescribed by the controller of Examinations, by the head of the department through the Dean of the college.

Two copies in addition are to be submitted as an electronic version of the entire. Thesis in a standard C.D format by mentioning the details and technicalities used in the C.D format.

The thesis shall be examined by a minimum of three examiners; one internal and two external examiners, who shall not be the examiners for the Theory and Clinical; and on the acceptance of the thesis, by two examiners the student shall be allowed to appear for the final examination.

EVALUATION OF THESIS:

ACCEPTED/NOT ACCEPTED - No marks will be given

SCHEME OF EXAMINATION

SRM UNIVERSITY EXAMINATION PATTERN:

THEORY PAPERS:

There are four papers, each of three hours duration.
(Each paper carries 100 marks) Total 400 marks

- I Basic Sciences applied to Paediatric Surgery
- II Neonatal Surgery and Paediatric Genito-Urinary Surgery
- III Regional and Systemic Paediatric Surgery
- IV Recent Advances in Paediatric Surgery

Clinical and Oral Examination: - Practical/Clinical and Oral Examination

LONG CASE	ONE	One Hour	100 marks
SHORT CASE	TWO	One Hour (30 mins each)	100 marks
WARD ROUNDS	FOUR Minimum	One Hour	100 marks
ORAL EXAMINATION		One Hour	100 marks

Total Duration of the Examination: - 4 hours

Total marks for the Examination: - 400 marks

Note: Not more than 3 candidates will be examined in practical examination per day

MARKS QUALIFYING FOR A PASS

Parts	Maximum Marks - 800	Marks Qualifying for a Pass (50%) - 400
Theory	400	200
Clinical and oral	400	200

A Student shall secure not less than 50% marks in each head of passing which shall include 1. Theory 2. Practical including clinical and viva voce examination

*“The postgraduate medical students are required to pass theory and practical examinations separately. An examinee should obtain minimum 40% marks in each theory paper and not less than 50% marks cumulatively in all the four papers for Degree examination to be cleared as “Passed” at the said Degree examination”

**As per Medical Council of India notification date 03.09.2014 and the same approved in the 28th Academic council meet of SRM University held on 23/03/2015.*

EXAMINATION AND EVALUATION

1. EXAMINERS

(a). All the Post Graduate Examiners shall be recognized Post Graduate qualifications in the subject concerned.

(b). For all Post Graduate Examinations the minimum number of Examiners shall be four, out of which at least two (50%) shall be External examiners, who shall be invited from other recognized universities from outside the state and other two will be internal examiners for M.Ch.

(c). Under exceptional circumstances, examinations may be held with 3(three) examiners provided two of them are external and Medical Council of India is intimated the justification of such action prior to publication of result for approval. Under no circumstances, result shall be published in such cases without the approval of Medical Council of India.

(d). In the event of there being more than one centre in one city, the external examiners at all centres in that city shall be the same. When there is more

than one centre of examination, the University shall appoint a Supervisor to coordinate the examination on its behalf.

(e). The guidelines regarding appointment of examiners are as follows:-

1. No person shall be appointed as an examiner in any subject unless he/she fulfils the minimum requirements for recognition as a post graduate teacher as laid down by the Medical Council of India and has teaching experience of 8(Eight) years as a lecturer/ Assistant Professor out of which he /she has got less than 5(five) years teaching experience of examinership for post graduate diploma in the concerned subject. Out of internal examiner, one examiner shall be a professor or Head of Department.

2. There shall be at least four examiners in each subject at an examination out of which at least 50 %(fifty percent) shall be external examiners. The external examiner who fulfils the condition laid down in clause – 1 above shall ordinarily be invited from another recognized university, from outside the State: provided that in exceptional circumstances examinations may be held with 3(three) examiners if two of them are external and Medical council of India.

3. An external examiner may be ordinarily be appointed for not more than three years consecutively. Thereafter he/she may be reappointed after an interval of two years.

4. The internal examiner in a subject shall not accept external examinership for a college from which external examiners at all centres in the city shall be the same.

5. The same set of examiners shall ordinarily be responsible for the written, practical or part of examination.

6. In the event of there being more than one centre in one city, the external examiners at all the centres in the city shall be the same.

7. There shall be a Chairman of the Board of paper – setters who shall be an external examiner and shall moderate the question papers.

8. Where there is more than one centre of examination, there shall be Co-ordinator appointed by the University who shall supervise and Co-ordinate the examination on behalf of the university with independent authority.

9. The Head of the Department of the institution concerned shall ordinarily be one of the internal examiners and second internal examiner shall rotate after two year

(2) Number of candidates

The maximum number of candidates to be examined in Clinical/Practical and Oral on any day shall not exceed three for MCh degree examinations

(3) Number of examinations

The university shall conduct not more than two examinations in a year, for any subject, with an interval of not less than 4 and not more than 6 months between the examinations.

II. M.Ch in Paediatric Surgery

The examination shall consist of: Theory and Clinical/Practical and Oral.

(a) Theory

There shall be four theory papers; one paper out of these shall be on Basic Medical Sciences, and another paper on Recent advances. The Theory examination will be held sufficiently earlier than the Clinical and Practical examination, so that the answer books can be assessed and evaluated before the start of the clinical/practical and oral examination

(b) Clinical/Practical and Oral

Practical examination shall consist of carrying out special investigative techniques for Diagnosis and Therapy. Oral examination shall be comprehensive to test the candidate's overall knowledge of the subject.

A candidate shall secure not less than 50% marks in each head of passing which shall include (1) Theory (2) Practical including clinical and viva voce examination.

Evaluation of Answer Scripts

The answer books will be valued by two examiners. One of the two examiners will be from this university and the other will be from any other university. The Average of the two marks secured by the candidate will be taken into account. If the difference between two marks exceeds 20%, the answer scripts shall be valued by the third examiner. The average of the nearest two shall be considered as the final mark.

MODEL QUESTION PAPER

M.CH DEGREE EXAMINATIONS

(Higher Specialities)

Paediatric Surgery

Paper I - BASIC SCIENCES APPLIED TO PAEDIATRIC SURGERY

Time: Three hours

Maximum: 100 Marks.

ANSWER ALL QUESTIONS

Draw suitable diagrams wherever necessary.

I. Essays:

2 x 20 = 40 Marks

1. Describe Embryology, Development and Classification of Anorectal malformations with relevance to management.
2. Describe Pre diagnostic modalities with relevance to Prenatal and Postnatal Intervention

II. Write short notes on:

10 x 6 = 60 Marks

1. Patent Urachus.
2. Horse Shoe Kidney.
3. Congenital Mesocolic Hernia.
4. Neonatal Hypoglycemia.
5. Mesenchymal Hamartoma Liver.
6. Branchial Fistula.
7. Annular Pancreas.
8. Uterus Didelphys.
9. Torticollis.
10. Gastic Volvulus.

M.CH DEGREE EXAMINATIONS

(Higher Specialities)

Paediatric Surgery

Paper II – NEONATAL SURGERY AND PAEDIATRIC GENITOR URINARY SURGERY

Time: Three hours

Maximum: 100 Marks.

ANSWER ALL QUESTIONS

Draw suitable diagrams wherever necessary.

I. Essays:

2 x 20 = 40 Marks

1. Discuss the various common surgical causes of Acute Respiratory Distress in a new born baby. Discuss the Etiopathogenesis, Clinical features and Management of a new born with Oesophageal atresia and Tracheoesophageal fistula.
2. Discuss about Posterior Urethral valves under the following heading:
a) Etiopathogenesis b) Clinical Features c) Diagnosis d) Treatment.

II. Write short notes on:

10 x 6 = 60 Marks

1. Radio scintigraphy in Paediatric surgery.
2. Multicystic Dysplastic Kindney.
3. Female Pseudohermaphroditism.
4. Cephalhematoma.
5. Facial Clefts.
6. Pentology of Cantrell.
7. Arteriovenous Malformation.
8. Beckwith-Wiedeman Syndrome.
9. Amniocentesis.
10. Neuronal Intestinal Dysplasia.

M.CH DEGREE EXAMINATIONS

(Higher Specialities)

Paediatric Surgery

Paper III – REGIONAL AND SYSTEMIC PAEDIATRIC SURGERY

Time: Three hours

Maximum: 100 Marks.

ANSWER ALL QUESTIONS

Draw suitable diagrams wherever necessary.

I. Essays:

2 x 20 = 40 Marks

1. Management options in a Neonatal classical Hirshprung's disease.
2. Discuss the Epidemiology, Pathology, Diagnosis, Staging and Treatment of Hepatoblastoma.

II. Write short notes on:

10 x 6 = 60 Marks

1. Retractable Testis.
2. Rectal Polyp.
3. Investigations in Gastroesophageal Reflux
4. Laparoscopic Appendicectomy
5. Actinomycin-D
6. Dysgenetic Gonad.
7. Female Inguinal Hernia.
8. Omphalo Mesentric Band.
9. Chronic Parotitis in Children.
10. Congenital Oesophageal Stenosis.

M.CH DEGREE EXAMINATIONS

(Higher Specialities)

Paediatric Surgery

Paper IV – RECENT ADVANCES IN PAEDIATRIC SURGERY

Time: Three hours

Maximum: 100 Marks.

ANSWER ALL QUESTIONS

Draw suitable diagrams wherever necessary.

I. Essays:

2 x 20 = 40 Marks

1. Describe various biopsy techniques for children with Cancer.
2. Discuss Ureteropelvic junction obstruction under the following:
 - a) Etiology
 - b) Clinical Features
 - c) Role of minimally invasive surgery.

II. Write short notes on:

10 x 6 = 60 Marks

1. Endoscopic third ventriculostomy.
2. Indications for splenectomy in children
3. Gastrograffin
4. Complications of laproscopic repair of inguinal hernia in children.
5. Umbilicoplasty.
6. Role of Lasers in Paediatric surgery.
7. Gastroscopy in children.
8. Cystoscopy.
9. Biliary ascites.
10. Use of appendix in surgical reconstruction.

RECOMMENDED BOOKS AND JOURNALS

- **Paediatric Surgical Diseases, A Radiological-Surgical Case study approach**, Editors - Ciro Esposito, Giovanni Esposito; 537 pp., Italy, Springer publications - Berlin, 2009.
- **Paediatric Surgical Diagnosis**, 2nd Edition, Editors – Sanjay N Oak, Nitin G Chambal, Naveen Vishwanath; 360pp., India, New Delhi, Jaypee Publications, 2000.
- **A Colour Atlas of Minimal Access Surgery in Children**, Editors – Sanjay N Oak, Sandesh Parelkar, Prakash Agarwal; 215pp., India, New Delhi, Jaypee Publications, 2005.
- **Jones Clinical Paediatric Surgery**, 6th Edition, Editors – John M Hutson, Michael O’ Brien, Alan A Woodward, Spencer W Beasley; 321pp., Melbourne, Australia, Blackwell Publications, 2008.
- **Paediatric Minimal Access Surgery**, Editors – Jacob C. Langer, Craig T Albanese; 504pp., USA and Canada, Taylor & Francis Publications, 2005.
- **Newborn Surgery**, 3rd Edition, Editor – Prof Prem Puri; 1020pp., Dublin – Ireland, Hodder Arnold Publications, 2011.
- **Complications of Paediatric and Adult Spinal Surgery**, Editors – Alexander R Vacarro, John J Regan, Alvin H Crawford, Edward C Benzel, D Greg Anderson; 789pp., New York, USA, Marcel Dekker Publications, 2004.
- **Paediatric Surgery**, 6th Edition, Volumes 1 and 2, Editors – Jay L Grosfield, James O’ Neill, Arnold Coran, Eric W Fonkalsrud; Vol1 1-1140pp., Vol2 1140 – 2146pp., Philadelphia, Mosby Publications, Elsevier, 2006.
- **Paediatric Oral and Maxillofacial surgery**, Editors – Leonard B Kaban, Maria J Troulis; 470pp., Boston, Massachusetts, Sanders (Elsevier) Publications, 2004.

- **Atlas of Paediatric Surgical Techniques**, Editors – Dai H Chung, Mike K Chen; 388pp., Philadelphia, Elsevier Saunders Publications, 2010.
- **Operative Paediatric Surgery**, 7th Edition, Editors – Lewis Spitz, Arnold Coran;1115pp., USA and London, CRC Press, Taylor & Francis group Publications,2013.
- **Paediatric Surgery**, 4th Edition, Editors – Keith W Ashcraft, George Whitfield Holcomb, J Patrick Murphy;1163pp., Philadelphia, Pennsylvania, Kansas City (USA), Elseviers Saunders, 1980,1993,2000,2005.
- **Paediatric Surgery - Diagnosis and Management**, Editors – Prem Puri, Michael Hollwarth; Dublin-Ireland, Austria, Springer Publications, 2006,2009.
- **Paediatric Sinusitis and Sinus Surgery**, Editor – Ramzi T Younis; 263pp., NewYork, Taylor & Francis group, NewYork, 2006.
- **Re-operative Paediatric Surgery**, Editors – Steven Teich, Donna A Caniano;554pp., Columbus, Ohio, Humana Press, 2008.
- **Paediatric Surgery**, 7th Edition, Volumes 1 and 2, Editors – Arnold G Coran, N Scott Adzick, Thomas M Krummel, Jean-Martin Laberge, Robert C Shamberger, Anthony A Caldamone;Vol1 1-767pp., Vol2 767 – 1738pp., Philadelphia, Elsevier-Saunders Publications, 2009.
- **The Kelalis-King-Bellman Textbook of Clinical Paediatric Urology**, 5th Edition, Editors – Steven G Domino, Douglas A Canning, Antoine E Hoary; 1375pp., Pittsburgh, Canada, 2007.
- **Paediatric Urology**, 2nd Edition, Editors – John P Gear heart, Richard C Rink, Pierre DE Mouriquand; 818pp., Baltimore and Maryland Press, Saunders Elsevier Publications, 2010.

RECOMMENDED JOURNALS

- **European Journal of Paediatric Surgery**, Editor-in-chief B.M. Ure; Hannover, Thieme Publications, Wolters & Kluwer Publications, 2014.
- **Journal of Indian Association of Paediatric surgery**, JIAPS, Editor-in-chief Biswanth Mukhopadhyay; Kolkata, Wolters& Kluwer Publications, 2014
- **African Journal of Paediatric Surgery**, Editor-in-chief Francis A Uba; Wolters and Kluwer Publications, 2014.
- **Journal of Paediatric Urology**, An international journal of Fetal, Adolescent and Paediatric Urology, Editor-in-chief J David Frank, Editors – Prof Anthony A Caldamone, Pdraig Caldamone and Piet Hoebeke
- **Journal of Paediatric Surgery**, Editor in chief Jay.L.Grosfeld, American Association of Paediatrics, American Paediatric surgical association, Canadian association of paediatric surgeons and Pacific association of paediatric surgeons, Elsevier publications, USA.
- **Paediatric Surgery International**, Editor in chief Prof Prem Puri – Ireland, AG Coran, Ann Arbor- Official publication of the society of paediatric surgical research, Japanese society of paediatric surgeons and paediatric colorectal society, Springer Publications, USA.
- **Chinese Journal of Paediatric Surgery**, Chinese Medical Association, Wanfang Med Online, China.
- **Egyptian Paediatric Association Gazette**, Editor in chief K.H Bahalaaedin, Cairo, Egypt, Elsevier Publications