

**II Paper: Technical subject**

1. **Embryology**
  - 1.1 Kidney
  - 1.2 Ureter
  - 1.3 Bladder
  - 1.4 Male and Female Genitalia
2. **Anatomy**
  - 2.1 Kidney
  - 2.2 Ureter
  - 2.3 Bladder
  - 2.4 Retroperitoneum
  - 2.5 Pancreas
3. **Physiology**
  - 3.1 Kidney
  - 3.2 Ureter
  - 3.3 Bladder
4. Nephropathy : Aetiology and pathogenesis of different nephropathies
5. Pathophysiology of Renovascular Hypertension and Obstructive Uropathy
6. Renal failure
  - 6.1 The aetiology, pathophysiology, diagnosis and treatment of acute renal failure
  - 6.2 The aetiology, pathophysiology, diagnosis and treatment of chronic renal failure
7. Neuromuscular dysfunction of lower urinary tract
8. Concept of Urinary Diversions
9. Renal replacement therapy / Plasma exchange / CRRT / Plasma reabsorption
10. Dialysis access
  - 10.1 Vascular access
  - 10.2 Peritoneal access
11. Role of radio-isotopes study in kidney diseases
12. Kidney transplantation
  - 12.1 History of kidney transplantation
  - 12.2 Indications for kidney transplantation, explain the different disease processes resulting in end-stage renal disease, and describe the treatment options.
13. Immunology
  - 13.1 Basics of immunology
  - 13.2 Immunosuppression related to transplantation
  - 13.3 Drugs used in immunosuppression
    - 13.3.1 Cyclosporine
    - 13.3.2 Azathioprine and steroids
    - 13.3.3 Mycophenolate Mofetil
    - 13.3.4 Tacrolimus
    - 13.3.5 mTOR inhibitors
    - 13.3.6 Recent Immunosuppressant

लोक सेवा आयोग

नेपाल स्वास्थ्य सेवा, सर्जरी समूह, किड्नी ट्रान्सप्लान्ट सर्जरी उपसमूह, नवौं (९) तह, कन्सल्टेन्ट किड्नी ट्रान्सप्लान्ट सर्जन पदको खुला तथा आन्तरिक प्रतियोगितात्मक परीक्षाको पाठ्यक्रम

- 13.4 Immunology of graft rejection
  - 13.4.1 Innate immune response
  - 13.4.2 Adaptive immunity
  - 13.4.3 Effector immunity
- 13.5 Delayed graft function
- 13.6 Acute graft rejection
- 13.7 Chronic graft rejection
- 13.8 Clinical and laboratory markers of over- and under- immunosuppression.
14. Histocompatibility in renal transplantation
  - 14.1 HLA matching
  - 14.2 Donor cross matching
  - 14.3 Strategy for sensitized patients management
15. Living donor kidney transplantation
  - 15.1 Advantages of living donor kidney transplantation
  - 15.2 Selection and evaluation of potential living kidney donors
  - 15.3 Living kidney donors with medical comorbidities
  - 15.4 Living donor nephrectomy : Open and laparoscopic
  - 15.5 Long term risks after living kidney donation
  - 15.6 Psychological impact of donor nephrectomy
  - 15.7 Legal and ethical dilemmas in living donor kidney transplantation
16. Transplantation in ABO incompatibility
17. Transplantation in MHC incompatibility
18. Expanded criteria donors, Paired exchange living donor kidney transplantation, Non directed living donor kidney transplantation
19. Preparation of kidney transplantation recipient
20. Surgical technique for renal transplantation
  - 20.1 Preparation of bed
  - 20.2 Bench surgery
  - 20.3 Revascularization and reconstruction of the urinary tract
  - 20.4 Transplantation in abnormal urinary bladder
21. Kidney Preservation
  - 21.1 Principles of cold storage preservation
  - 21.2 Clinically used solutions
  - 21.3 Hypothermic machine perfusion and normothermic perfusion
  - 21.4 Reperfusion injury
22. Brain death and cardiac death
  - 22.1 Donor criteria
  - 22.2 Care of deceased donor
  - 22.3 Physiology of brain death
  - 22.4 Clinical examination of brain dead donor and cardiac dead donor
  - 22.5 Management of potential donor
  - 22.6 Cadaveric nephrectomy
  - 22.7 Renal preservation in brain death donor

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23. Immediate Post Transplant Care after organ (Kidney & Pancreas) transplantation
  - 23.1 Immediate Post Transplant Management
    - 23.1.1 ICU management
    - 23.1.2 Surgical and Medical Complications
    - 23.1.3 Prophylactic Regimen
    - 23.1.4 Immunosuppression therapy
  - 23.2 Management of Acute Cellular Rejection and Antibody Mediated Rejection
    - 23.2.1 Management strategies of acute cellular rejection
    - 23.2.2 Management strategies of antibody mediated (humoral) rejection
    - 23.2.3 Acute Tubular Injury of the transplanted kidney
  - 23.3 Post-operative Patient Education
    - 23.3.1 Medication teaching
    - 23.3.2 Signs and symptoms of infection and rejection
    - 23.3.3 Monitoring for infection, rejection and changes in medical status
    - 23.3.4 Follow up care post discharge
24. Anesthesia for patients undergoing renal transplantation
25. Perioperative care of kidney recipient
26. Chronic allograft failure
  - 26.1 Pathophysiology of allograft damage
  - 26.2 Assessment of failing allograft
  - 26.3 Non-invasive diagnosis of chronic graft nephropathy
27. Complications after kidney transplantation
  - 27.1 Vascular and lymphatic complications
  - 27.2 Urological complications after kidney transplantation
  - 27.3 Infection
  - 27.4 Malignancy
  - 27.5 Neurological complications
28. Long term outcomes in kidney recipients and quality of life
29. Renal transplantation in children
  - 29.1 Access of transplantation
  - 29.2 Timing of transplantation
  - 29.3 Recurrence of primary disease
  - 29.4 Physical and sexual growth after kidney transplantation
30. Combined organ transplantation including Pancreas transplant
31. Human Organ Transplantation Act and other relevant regulations
32. Concept and practice of international rules and regulations on organ donation and transplantation
33. Ethics in organ transplantation and organ trafficking
34. WHO Surgical Checklist

पाठ्यक्रम लागू मिति: नेपाल स्वास्थ्य सेवा, सर्जरी समूह, किड्नी ट्रान्सप्लान्ट सर्जरी उपसमूह, नवौं तह, कन्सल्टेन्ट किड्नी ट्रान्सप्लान्ट सर्जन पदको आ.व. २०७७-७८ मा प्रकाशित विज्ञापन देखि लागू ।