

NIZAM'S INSTITUTE OF MEDICAL SCIENCES

(A University established under the State Act)
Panjagutta, Hyderabad – 500082.

DM (NEPHROLOGY)
FINAL EXAMINATIONS – July 2016

PAPER – II
(Clinical Nephrology)

Duration: 3 Hours

Marks: (10x10) = 100

ALL QUESTIONS ARE COMPULSORY

Write short notes on:

1. Discuss the diagnosis and management of polyarteritis nodosa *classif. criteria*
- ✓ 2. Thrombotic microangiopathy: classification and management
- ✓ 3. Congenital anomalies of kidney and urinary tract (CAKUT) *☺*
- ✓ 4. Treatment of IgA nephropathy *Japan – MRF chann.*
- ✓ 5. Role of dialysis in management of poisoning *☺ HD, HP, PP, MARE.*
- ✓ 6. Management of class V Lupus Nephritis *15%.*
- ✓ 7. Classification and diagnosis of renal amyloidosis *←*
- ✓ 8. Primary Anti-Phospholipid syndrome-clinical manifestations and management *—*
- ✓ 9. Pathophysiology and management of malnutrition in CKD
- ✓ 10. Prevention of catheter induced urinary tract infection

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DM (NEPHROLOGY)
FINAL EXAMINATIONS – July 2016

PAPER – I
(Basic Medical Sciences Pertaining to Nephrology)

Duration: 3 Hours

Marks: (10x10) =100

ALL QUESTIONS ARE COMPULSORY

Write short notes on:

- ✓ 1. Podocyte in renal physiology and disease
- ✓ 2. Free water clearance in health and disease
- ✓ 3. Structure of glomerular basement membrane
- ✓ 4. Use of radionuclides in renal diseases
- ✓ 5. Uremic toxins
- ✓ 6. Renal ammoniogenesis in acid base balance and kidney disease progression
- ✓ 7. Point of care urine examination
- ✓ 8. Immunofluorescence examination of kidney biopsy
- ✓ 9. Renal physiology in the elderly
- ✓ 10. Modulation of alternate C3 convertase

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DM (NEPHROLOGY) FINAL EXAMINATIONS – July 2016

PAPER – III (Dialysis and Transplantation)

Duration: 3 Hours

Marks: (10x10) =

ALL QUESTIONS ARE COMPULSORY

Write short notes on:

1. ✓ Discuss evaluation of hemodialysis adequacy VRR
Kt/V Ccr
NCS
HEMO
MPO
PTH.
2. Biomedical waste management in hemodialysis Bernold, Gludau, leue, green
refect.
3. ✓ Evaluation and management of sensitized renal transplant recipient UNOS
4. ✓ Vaccination in renal transplant recipient OPV-IPV. MMR
5. ✓ Role of automated peritoneal dialysis APD, CCPD,
6. ✓ Prevention of PD peritonitis - Catheter
7. ✓ Dialysis access monitoring and surveillance *DTRC
DOQR
access flow.
8. ✓ Lymphocyte depleting agents in renal transplant current usage - ATG
Alemtuz
LFA
9. ~~9.~~ Graft nephrectomy – pros & cons PSMA
infection, BKV.
10. ✓ Contraindications and side effects of proliferation signal inhibitors MTOR

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WIZAM'S INSTITUTE OF MEDICAL SCIENCES

(A University established under the State Act)
Panjagutta, Hyderabad – 500082.

DM (NEPHROLOGY)
FINAL EXAMINATIONS – July 2016

PAPER – IV
(Recent advances in Nephrology)

Duration: 3 Hours

Marks: (10x10) = 100

ALL QUESTIONS ARE COMPULSORY

Write short notes on:

- ✓ 1. Alport's syndrome in females → X linked AD, AR hematuria Pathogenesis
- ✓ 2. Evolution of treatment of focal segmental glomerulosclerosis over the last three decades
- ✓ 3. Heat stress nephropathy
- ✓ 4. Pathophysiology of preeclampsia and recent advances in management of severe preeclampsia 8FL (3)
- ✓ 5. Percutaneous renal denervation – current status Simple RIF US
- ✓ 6. Direct acting antiviral agents in management of hepatitis C in chronic kidney disease and renal transplantation
- ✓ 7. Hypoxia inducible factor stabilizers for treatment of anemia of Chronic kidney disease
- ✓ 8. Oral hypoglycemic agents in CKD stage 4 and 5. SGLT₂
- ✓ 9. Role of epigenetics in pathogenesis of diabetic nephropathy - methylations/demethylations - deacetylation/acetylation
- ✓ 10. Extracorporeal therapies in management of myeloma kidney. Eulike Myeloma HIRE

Rajiv Gandhi University of Health Sciences

D.M Degree Examination – JULY 2016

Time: Three Hours

Max. Marks: 100 Marks

NEPHROLOGY - PAPER -IV
QP Code: 7274

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary. Answer all questions

LONG ESSAY (These questions carry 10 marks each)

10 x 10 = 100 Marks

1. Micro RNA in kidney diseases
2. CKD-MBD in kidney transplant recipients
3. Renal consequences of proteinuria
4. Podocyte biology
5. ✓ ASTRAL and CORAL trial
6. Renal protective mechanisms of ACE inhibitors
7. Mechanism of progression of AKI to CKD
8. Long term cardiovascular and renal outcomes of PIH
9. Prune belly syndrome
10. Monoclonal gammopathy of renal significance

Rajiv Gandhi University of Health Sciences

D.M Degree Examination - JULY 2016

Max. Marks: 100 Marks

Time: Three Hours

NEPHROLOGY - PAPER - I

QP Code: 7271

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary. Answer all questions

LONG ESSAY (These questions carry 10 marks each)

10 x 10 = 100 Marks

1. Aquaporins
2. Renal handling of uric acid
3. Renal hypertrophic response to nephron loss
4. Diuretic renogram
5. Proteomics in CKD
6. Tubuloglomerular feedback
7. Renal embryogenesis
8. Role of mesangial cells in renal diseases
9. Nephron endowment
10. Angiotensin and development anomaly

Rajiv Gandhi University of Health Sciences

D.M Degree Examination - JULY 2016

Time: Three Hours

Nephrology - PAPER - III

Max. Marks: 100 Marks

QP Code: 7273

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary. Answer all questions.

LONG ESSAY (These questions carry 10 marks each)

10 x 10 = 100 Marks

1. Intradialytic hypotension
2. New onset diabetes post transplant
3. Tacrolimus vs cyclosporine in renal transplantation
4. Diagnosis and management of cytomegalo virus disease in renal transplant
5. ✓ Long term complications of renal transplantation
6. ✓ Cross match techniques in renal transplant and its implications
7. Biological agents in renal transplant
8. Metabolic complications in patients with continuous ambulatory peritoneal dialysis
9. ✓ Etiopathogenesis of erectile dysfunction in dialysis patient
10. ✓ Calcineurin inhibitor avoidance in renal transplant

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Rajiv Gandhi University of Health Sciences

D.M Degree Examination – JULY 2016

Time: Three Hours

Max. Marks: 100 Marks

Nephrology - PAPER - II

QP Code: 7272

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary. Answer all questions

LONG ESSAY (These questions carry 10 marks each)

10 x 10 = 100 Marks

1. Managing chronic kidney stage V patient with HIV infection on peritoneal dialysis.
2. Renovascular hypertension due to Takayasu disease
3. Sudden cardiac death in dialysis patients – pathophysiology and prevention
4. Uremic pruritis – pathophysiology and treatment
5. Current concepts in the management of pre-eclampsia
6. Urinary biomarkers of Acute Kidney injury and its clinical significance
7. Autosomal recessive polycystic kidney disease – diagnosis and management
8. Management of refractory hypertension
9. Pauci-immune rapidly progressive glomerulonephritis and its management
10. Chronic kidney disease in children

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MANIPAL UNIVERSITY

DM (NEPHROLOGY) DEGREE EXAMINATION – JULY 2016

SUBJECT: PAPER I: BASIC SCIENCE

Wednesday, July 13, 2016

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

✍ **Long questions:**

1. Discuss the pathogenesis, differential diagnosis and evaluation and management of hyponatremia.

(20 marks)

2. Describe phosphorous homeostasis and its relevance in management of chronic kidney disease.

(20 marks)

3. **Write short notes on:**

3A. Diuretic resistance

3B. Immunologic tolerance

3C. Urea reduction ratio

3D. Renin Angiotensin Aldosterone System blockade

3E. Glomerular filtration rate estimation

3F. Assessment of proteinuria

(10 marks × 6 = 60 marks)



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MANIPAL UNIVERSITY
DM (NEPHROLOGY) DEGREE EXAMINATION – JULY 2016
SUBJECT: PAPER II: CLINICAL NEPHROLOGY

Thursday, July 14, 2016

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

✍ **Long questions:**

1. Discuss the etiology, pathogenesis, pathology and management of rapidly progressive glomerulonephritis.

(20 marks)

2. Describe the risk factors and pathophysiology of progression of chronic kidney disease and various measures to slow the same.

(20 marks)

3. **Write short notes on:**

3A. Diagnosis and treatment of class 4 lupus nephritis

3B. Collapsing focal segmental glomerulosclerosis

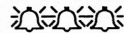
3C. Dysproteinemia

3D. Etiology and treatment of hypercalcemia

3E. Immunosuppressive treatment of minimal change disease.

3F. Evaluation of isolated hematuria.

(10 marks × 6 = 60 marks)



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MANIPAL UNIVERSITY

DM (NEPHROLOGY) DEGREE EXAMINATION – JULY 2016

SUBJECT: PAPER III: RENAL REPLACEMENT THERAPY

Friday, July 15, 2016

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

✍ **Long Question:**

1. Describe the short term complications during haemodialysis and etiology, pathogenesis and management of hypotension during haemodialysis.

(20 marks)

2. Define delayed allograft function, its aetiology and prevention and management of the same.

(20 marks)

3. **Short Notes:**

3A. Haemodiafiltration

3B. Prescription for plasma exchange in anti-Glomerular basement disease

3C. Haem dialyser membrane characteristics

3D. Induction therapy for renal transplant

3E. Peritoneal equilibration test

3F. Lymph cytotoxic WBC cross match

(10 marks × 6 = 60 marks)



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MANIPAL UNIVERSITY

DM (NEPHROLOGY) DEGREE EXAMINATION – JULY 2016

SUBJECT: PAPER IV: RECENT ADVANCES

Saturday, July 16, 2016

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

✍ **Long questions:**

1. Discuss the pathogenesis of acute kidney injury mechanisms of epithelial repair and regeneration after acute kidney injury and newer modalities in treatment. (20 marks)
2. Discuss pathogenesis of vascular calcification in chronic kidney disease, clinical manifestations evaluation and management of the same. (20 marks)

3. **Write short notes on:**

- 3A. Dense deposit disease
- 3B. Use of vaptans in kidney disease
- 3C. Nonpharmacological treatment of hypertension
- 3D. Treatment modalities for Immunoglobulin A Nephropathy
- 3E. Management of severe lupus nephritis
- 3F. Wearable artificial kidney

(10 marks × 6 = 60 marks)



SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES, TIRUPATI

D.M. NEPHROLOGY FINAL UNIVERSITY EXAMINATIONS

Paper 1: Basic Medical Sciences

Date: 14.7.2016

Time: 3 hours

Maximum marks: 100

Instructions to Doctors: 1) Answer all questions and all questions carry equal marks
2) Draw neat and labeled diagrams wherever necessary.

- 1) Discuss the countercurrent multiplier and exchanger systems in the kidney. 10
- 2) What is renal senescence? What is the role of klotho gene in kidney? 10
- 3) Give an overview of peritoneal membrane & what is its filtration characteristics in CAPD? 10
- 4) Renal microvasculature. 10
- 5) T cell stimulation. 10
- 6) What are the normal anatomical & physiological defense mechanisms in genitourinary tract to prevent urinary tract infection? 10
- 7) Discuss the insulin metabolism in CKD patients. What is the clinical significance? 10
- 8) What are aquaporins? Discuss the role of aquaretics in nephrology. 10
- 9) What are the different urinary acidification mechanisms in the kidney. Elaborate on renal ammoniogenesis. 10
- 10) Epigenetic mechanisms and its application in nephrology. 10

SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES, TIRUPATI

D.M. NEPHROLOGY FINAL UNIVERSITY EXAMINATIONS

Paper 2: Clinical Nephrology I

Date: 16.7.2016

Time: 3 hours

Maximum marks: 100

Instructions to Doctors: 1) Answer all questions and all questions carry equal marks
2) Draw neat and labeled diagrams wherever necessary.

- 1) Write an overview of complement activation pathways and write a short note on C3 glomerulopathy. 10
- 2) Define monoclonal gammopathy of renal significance (MGRS). What is the current understanding about this entity. 10
- 3) What are the pitfalls of ISN-RPS classification of lupus nephritis? 10
- 4) How will you manage a child with Grade-V VUR in right kidney and Grade-III VUR in left kidney. 10
- 5) Write shortly on Mesoamerican nephropathy. 10
- 6) What are the ill-effects of metabolic acidosis in CKD patients? How metabolic acidosis contributes to CKD progression? What is the current guideline on the treatment of metabolic acidosis in CKD? 10
- 7) AKI following liver transplantation. 10
- 8) How will you plan incretins based therapy in patients with diabetic kidney disease? 10
- 9) How will you manage a CKD patient during her pregnancy? 10
- 10) How will you evaluate a patient with stage-II hypertension due to renal artery stenosis. 10

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SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES, TIRUPATI

D.M. NEPHROLOGY FINAL UNIVERSITY EXAMINATIONS

Paper 3: Clinical Nephrology II

Date: 18.7.2016

Time: 3 hours

Maximum marks: 100

Instructions to Doctors: 1) Answer all questions and all questions carry equal marks
2) Draw neat and labeled diagrams wherever necessary.

- 1) What are the newer PD solutions? What are their advantages? 10
- 2) Chronic antibody mediated rejection. 10
- 3) Na profiling during hemodialysis. 10
- 4) Randomized controlled trials (RCTs) in steroid minimization protocols. 10
- 5) Define residual renal function? What is its importance? Discuss the strategies to maintain residual renal function. 10
- 6) "Fistula-First Initiative" project. 10
- 7) Deceased donor transplant program in India. 10
- 8) Elaborate on different types of peritoneal equilibration tests (PET) in CAPD & interpret their results. 10
- 9) Pre transplant lower urinary tract evaluation in a patient with obstructive nephropathy. 10
- 10) Discuss "Ideal Trial". What are the controversies in this trial. 10

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SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES, TIRUPATI

D.M. NEPHROLOGY FINAL UNIVERSITY EXAMINATIONS

Paper 4: Recent advances

Date: 20.7.2016

Time: 3 hours

Maximum marks: 100

Instructions to Doctors: 1) Answer all questions and all questions carry equal marks
2) Draw neat and labeled diagrams wherever necessary.

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| 1) IgG4 related kidney disease. | 10 |
| 2) Newer K ⁺ binding resins. | 10 |
| 3) Recent concepts on donor kidney allocation policy. | 10 |
| 4) Micro array based tests in the diagnosis of transplant rejection. | 10 |
| 5) Write briefly on eculizumab. | 10 |
| 6) Discuss the different aspects of Ambulatory Blood Pressure Monitoring (ABPM) in CKD patients. | 10 |
| 7) Discuss the recent advances in the treatment of amyloidosis. | 10 |
| 8) How will you utilize bioimpedance spectroscopy for monitoring of dialysis patients? | 10 |
| 9) What are Toll Like Receptors (TLRs)? Discuss their role in sepsis-AKI, ischemia reperfusion injury and delayed graft function. | 10 |
| 10) Discuss on bioartificial kidney. | 10 |

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D.M. DEGREE EXAMINATION, AUGUST 2016

DM7301 – BASIC SCIENCES AS APPLIED TO NEPHROLOGY

Time: Three Hours

Max. Marks: 100

Answer **ALL** Questions
(Draw diagrams, wherever necessary)

PART – A (2 × 20 = 40 Marks)

I. Essay Questions:

1. Describe how hydrogen ion is handled by the kidney.
Explain pathomechanisms of renal tubular acidosis.
2. Discuss causes, pathomechanisms and algorithmic approach of hypercalcemia.

PART – B (10 × 6 = 60 Marks)

II. Short notes

3. Phosphatoninins.
4. Utility of urinary electrolytes in clinical nephrology.
5. Hypokalemia and alkalosis mutually enhance each other.
Explain the mechanisms.
6. Stains used in nephropathology. Mention the advantages of each stain.
7. T-regulatory cells (T_{REGS}).

8. Structure and functions of intercalated cells.
9. Factors determining tubulo glomerular feedback.
10. Pores in peritoneal membrane and their significance.
11. Management of SIADH.
12. Brief outline of renal handling of magnesium.

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D.M. DEGREE EXAMINATION, AUGUST 2016
DM7302 – CLINICAL NEPHROLOGY

Time: Three Hours

Max. Marks: 100

Answer ALL Questions
(Draw diagrams, wherever necessary)

PART – A (2 × 20 = 40 Marks)

I. Essay Questions:

1. Discuss aetiopathogenesis, pathology and management of thrombotic microangiopathies.
2. Discuss the causes, pathomechanism and management of pigment induced acute kidney injury.

PART – B (10 × 6 = 60 Marks)

II. Write short notes on:

3. Mention KDIGO guidelines on management of IgA nephropathy.
4. Management of class V lupus nephritis.
5. Enumerate the causes of acute kidney injury following haematopoietic stem cell transplantation. Write a brief note on sinusoidal obstruction syndrome.
6. Management of acute pyelonephritis.

7. Antidiabetics in chronic kidney disease.
8. Non-calcium phosphate binders.
9. Pathology diabetic nephropathy.
10. Renal lesions in rheumatoid arthritis.
11. Management of vesico ureteric reflex.
12. Diagnostic criteria and management of hepatorenal syndrome.

Reg. No.

D.M. DEGREE EXAMINATION, AUGUST 2016

DM7303 – DIALYSIS AND TRANSPLANTATION

Time: Three Hours

Max. Marks: 100

Answer **ALL** Questions
(Draw diagrams, wherever necessary)

PART – A (2 × 20 = 40 Marks)

I. Essay Questions:

1. Discuss the pathogenesis, pathology and management strategies of acute antibody mediated rejection.
2. Discuss the diagnosis and management of acute peritonitis in a CAPD (Continuous Ambulatory Peritoneal Dialysis) patient.

PART – B (10 × 6 = 60 Marks)

II. Short notes

3. What is 'sodium profiling' in haemodialysis? When is it indicated?
4. Define 'high transporter status' in CAPD. How will you manage?
5. Enumerate the causes for 'Erythropoietin unresponsiveness' and mention diagnostic criteria for PRCA (Pure Red Cell Aplasia).

6. Role of plasmapheresis in clinical nephrology.
7. Diagnosis and management of BK virus nephropathy.
8. Diagnosis and management of 'Exit site infection' in CAPD.
9. Causes and evaluation of intra-dialytic hypotension in haemodialysis.
10. Vaccines for a patient awaiting renal transplantation.
11. What is $\left(\frac{Kt}{V}\right)$? How do you calculate it?
12. Components of haemodialysis prescription.

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M. DEGREE EXAMINATION, AUGUST 2016

DM7304 – RECENT ADVANCES

Time Hours

Max. Marks: 100

Answer **ALL** Questions
(Draw diagrams, wherever necessary)

PART – A (2 × 20 = 40 Marks)

Essay Questions:

What is renal monoclonal immunoglobulin deposition disease? Describe the types, pathology and management.

Management strategies of ABO-incompatible renal transplantation.

PART – B (10 × 6 = 60 Marks)

Short notes

Chronic kidney disease.

Diuretic drugs for management of hyperkalemia.

Direct acting antiviral drugs in the management of hepatitis C. Mention their advantages and side effects.

Obesity related renal disease.

Explain the concept of 'Nephron endowment' and its implications.

8. IgG-4 related renal disease.
9. What is belatacept? Mention trials related to it.
10. Utility of electron microscopy in nephropathology.
11. What is rituximab? What are its indications in nephrology?
12. Diagnosis of 'Brain death'.

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