

16 S PC 07-1

D.M. DEGREE EXAMINATION, JULY 2016

BRANCH: NEPHROLOGY

Paper I – Basic Sciences as applied to Nephrology

Time: Three Hours

Maximum Marks: 100

Answer all questions

(10x10=100)

1. Syndrome of inappropriate Anti Diuretic Hormone (ADH) Secretion.
2. Clinical approach to polyuria.
3. D-lactic acidosis.
4. Banff 2013 classification and update on renal allograft pathology.
5. Tonicity balance.
6. Consequences of nephrotic syndrome.
7. General mechanisms of glomerular injury.
8. Uremic toxins.
9. Critical evaluation of various eGFR calculating formulas.
10. Discuss the anatomy of peritoneal membrane and the physiology of sodium and water transport across the peritoneal membrane in peritoneal dialysis.

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16 S PC 07-2

D.M. DEGREE EXAMINATION, JULY 2016

BRANCH: NEPHROLOGY

Paper II – Clinical Nephrology

Time: Three Hours

Maximum Marks: 100

Answer all questions

(10x10=100)

1. Renal involvement in Gout.
2. Management of CKD (Chronic Kidney Disease) in children.
3. Management of Methyl Alcohol poisoning.
4. Impact of acute kidney injury on distant organ function.
5. Treatment of metabolic alkalosis.
6. Pregnancy and lupus nephritis – management issues.
7. Clinical consequences of chemical contamination of water used in dialysis.
8. Management of Candida urinary tract infections.
9. What is the current KDIGO definitions and staging of Acute Kidney Injury? How will you predict and prevent the development of contrast induced AKI in a patient going for CAG.
10. What are the causes of hyperkalemia in a patient with chronic kidney disease? How will you treat hyperkalemia? What are the newer drugs for treatment of hyperkalemia?

16 S PC 07-3

D.M. DEGREE EXAMINATION, JULY 2016

BRANCH: NEPHROLOGY

Paper III – Renal Replacement Therapies including Kidney Transplantation

Time: Three Hours

Maximum Marks: 100

Answer all questions

(10x10=100)

1. Hormone resuscitation in a prospective deceased donor.
2. Renal transplant in a patient with chronic Hepatitis B virus infection.
3. CNI (Calcineurin Inhibitor) minimisation and withdrawal.
4. Hydrothorax in CAPD.
5. Sequential PET (Peritoneal Equilibration Test).
6. Kidney donation after circulatory death (DCD).
7. Belatacept in kidney transplantation.
8. Renal replacement therapy in a patient with acute brain injury.
9. How will you prepare a patient with chronic kidney disease due to primary hyperoxaluria for dialysis and transplantation?
10. Kidney donor profile index (KDPI) scoring for organ allocation.

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16 S PC 07-4

D.M. DEGREE EXAMINATION, JULY 2016

BRANCH: NEPHROLOGY

Paper IV – Recent Advances in Nephrology

Time: Three Hours

Maximum Marks: 100

Answer all questions

(10x10=100)

1. Treatment of Hepatitis C infection in a patient with end stage renal disease awaiting kidney transplantation.
2. Hemodialysis for acute kidney injury during pregnancy.
3. ABO incompatible renal transplantation.
4. Vaptans in the treatment of ADPKD (Autosomal Dominant Polycystic Disease).
5. ALMS trial in lupus nephritis.
6. Asymmetric dimethyl arginine.
7. Atypical anti GBM disease.
8. Discuss the newer drugs to prevent progression of chronic kidney disease.
9. BOLD MRI in Reno vascular disease.
10. Stem cell therapy in Nephrology.

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(LJ 012)

AUGUST 2016

Sub. Code:1204

D.M. – NEPHROLOGY

Paper IV – RECENT ADVANCES

Q.P.Code: 161204

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Current concepts on pathogenesis, pathophysiology and management of IRGN (Infection Related Glomerulonephritis).
2. What is 'Brain death'? Outline the schema of establishment of deceased donor renal transplant programme.

II. Write notes on:

(10 x 7 = 70)

1. 'Steroid free' immunosuppressive protocol in renal transplantation.
2. IDEAL (Initiation of Dialysis Early And Late) trial – Essential features of the study and it's impact on clinical practice.
3. Icodextrin – role and advantages in CAPD.
4. Warfarin nephropathy – clinical picture and pathology.
5. Urinary biomarkers for diagnosis of acute rejection.
6. High flux haemodialysis – advantages and disadvantages.
7. Current status of renal sympathetic denervation for resistant hypertension. Quote the relevant trials.
8. Newer antiviral agents for hepatitis C infection.
9. What is eculizumab? Mention its indications.
10. Role of interventional treatment (stenting) in atherosclerotic renal artery stenosis. Quote the recent trials.

(LJ 011)

AUGUST 2016

Sub. Code: 1203

D.M. – NEPHROLOGY

Paper III – NEPHROLOGY – DIALYSIS AND TRANSPLANTATION

Q.P.Code: 161203

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Acute peritonitis in CAPD (Continuous Ambulatory Peritoneal Dialysis) – diagnosis, algorithmic management and complications. Enumerate the indications for catheter removal.
2. Post transplant lymphoproliferative disease – clinical presentation, diagnosis and management.

II. Write notes on:

(10 x 7 = 70)

1. Sodium and ultrafiltration profiling in haemodialysis.
2. Pitfalls of Micro lymphocytotoxicity test.
3. Intradialytic hypertension – causes and management.
4. Treatment of Hepatitis B in renal transplant recipients.
5. High transporter status in CAPD – definition, complications and management.
6. Diagnosis and management of A-V fistula thrombosis.
7. Mechanism of action and complications of Sirolimus.
8. Causes and management of urine leak in a renal transplant recipient.
9. Cachexia in haemodialysis patients – causes and evaluation.
10. Atypical mycobacterial infection in renal transplant recipients – clinical presentation and management.

B.M. - NEPHROLOGY

Paper 1 - NEPHROLOGY - BASIC SCIENCES

Q.P. Code: 161201

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. How is uric acid handled by kidneys? Mention common causes of Hyperuricaemia. Outline the impact of Hyperuricaemia on kidney.
2. Pathophysiology, common causes and management of Metabolic Alkalosis.

II. Write notes on:

(10 x 7 = 70)

1. Role of measurement of urinary electrolytes in clinical nephrology.
2. Alternate complement pathway - components, inhibitors and activators.
3. Algorithmic approach of Hypokalaemia.
4. Adequacy of kidney biopsy sample and stains used in analysis of kidney biopsy specimen.
5. Urine sediment analysis in Acute Kidney Injury.
6. Genetics of Alport's syndrome.
7. Pathology of Malignant Nephrosclerosis.
8. Interventions of urinary bladder.
9. Neptum - mechanism of action and clinical indications.
10. Pericapsular membranes.

(LJ 010)

AUGUST 2016

Sub. Code: 1202

D.M. - NEPHROLOGY

Paper II - CLINICAL NEPHROLOGY, DIALYSIS, TRANSPLANTATION

Q.P.Code: 161202

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Pathogenesis, and management of IgA nephropathy.
2. Pathologic classification of diabetic nephropathy and therapeutic trials in retarding progression of diabetic nephropathy.

II. Write notes on:

(10 x 7 = 70)

1. Liddle's syndrome - pathophysiology, clinical features and management.
2. Role of alkali supplementation of Chronic Kidney Disease.
3. IgG4 related renal disease - pathology, clinical features and treatment.
4. Causes and management of Hypercalcemia.
5. Rifampicin induced acute kidney injury - pathomechanism and pathology.
6. Pure red cell aplasia - diagnosis, causes and management.
7. Online haemodiafiltration - principle and advantages.
8. Vaccination of patients awaiting renal transplantation.
9. KDIGO (Kidney Disease Improving Global Outcome) guidelines on Iron therapy in Chronic Kidney Disease patients.
10. Pathology of antibody mediated rejection.

(LJ 009)

AUGUST 2016

Sub. ode:1201

D.M. – NEPHROLOGY

Paper I – NEPHROLOGY – BASIC SCIENCES

Q.P.Code: 161201

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. How is uric acid handled by kidneys? Mention common causes of Hyperuricemia. Outline the impact of Hyperuricemia on kidney.
2. Pathophysiology, common causes and management of Metabolic Alkalosis.

II. Write notes on:

(10 x 7 = 70)

1. Role of measurement of urinary electrolytes in clinical nephrology.
2. Alternate complement pathway – components, inhibitors and activators.
3. Algorithmic approach of Hypokalemia.
4. Adequacy of kidney biopsy sample and stains used in analysis of kidney biopsy specimen.
5. Urine sediment analysis in Acute Kidney Injury.
6. Genetics of Alport's syndrome.
7. Pathology of Malignant Nephrosclerosis.
8. Innervation of urinary bladder.
9. Vaptans – mechanism of action and clinical indications.
10. Pores in peritoneal membrane.

(LJ 012)

AUGUST 2016

Sub. Code:1204

D.M. – NEPHROLOGY

Paper IV – RECENT ADVANCES

Q.P.Code: 161204

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Current concepts on pathogenesis, pathophysiology and management of IRGN (Infection Related Glomerulonephritis).
2. What is 'Brain death'? Outline the schema of establishment of deceased donor renal transplant programme.

II. Write notes on:

(10 x 7 = 70)

1. 'Steroid free' immunosuppressive protocol in renal transplantation.
2. IDEAL (Initiation of Dialysis Early And Late) trial – Essential features of the study and its impact on clinical practice.
3. Icodextrin – role and advantages in CAPD.
4. Warfarin nephropathy – clinical picture and pathology.
5. Urinary biomarkers for diagnosis of acute rejection.
6. High flux haemodialysis – advantages and disadvantages.
7. Current status of renal sympathetic denervation for resistant hypertension. Quote the relevant trials.
8. Newer antiviral agents for hepatitis C infection.
9. What is eculizumab? Mention its indications.
10. Role of interventional treatment (stenting) in atherosclerotic renal artery stenosis. Quote the recent trials.

(LJ 011)

AUGUST 2016

Sub. Code:1203

D.M. – NEPHROLOGY

Paper III – NEPHROLOGY – DIALYSIS AND TRANSPLANTATION

Q.P.Code: 161203

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Acute peritonitis in CAPD (Continuous Ambulatory Peritoneal Dialysis) – diagnosis, algorithmic management and complications. Enumerate the indications for catheter removal.
2. Post transplant lymphoproliferative disease – clinical presentation, diagnosis and management.

II. Write notes on:

(10 x 7 = 70)

1. Sodium and ultrafiltration profiling in haemodialysis.
2. Pitfalls of Micro lymphocytotoxicity test.
3. Intradialytic hypertension – causes and management.
4. Treatment of Hepatitis B in renal transplant recipients.
5. High transporter status in CAPD – definition, complications and management.
6. Diagnosis and management of A-V fistula thrombosis.
7. Mechanism of action and complications of Sirolimus.
8. Causes and management of urine leak in a renal transplant recipient.
9. Cachexia in haemodialysis patients – causes and evaluation.
10. Atypical mycobacterial infection in renal transplant recipients – clinical presentation and management.

(LJ 010)

AUGUST 2016

Sub. Code:1202

D.M. – NEPHROLOGY

Paper II – CLINICAL NEPHROLOGY, DIALYSIS, TRANSPLANTATION

Q.P.Code: 161202

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on: (2 x 15 = 30)

1. Pathogenesis, and management of IgA nephropathy.
2. Pathologic classification of diabetic nephropathy and therapeutic trials in retarding progression of diabetic nephropathy.

II. Write notes on: (10 x 7 = 70)

1. Liddle's syndrome – pathophysiology, clinical features and management.
2. Role of alkali supplementation of Chronic Kidney Disease.
3. IgG4 related renal disease – pathology, clinical features and treatment.
4. Causes and management of Hypercalcemia.
5. Rifampicin induced acute kidney injury – pathomechanism and pathology.
6. Pure red cell aplasia – diagnosis, causes and management.
7. Online haemodiafiltration – principle and advantages.
8. Vaccination of patients awaiting renal transplantation.
9. KDIGO (Kidney Disease Improving Global Outcome) guidelines on Iron therapy in Chronic Kidney Disease patients.
10. Pathology of antibody mediated rejection.

Maharashtra



13031

D.M. (Nephrology) Examination, Summer 2016
BASIC MEDICAL SCIENCES AS RELATED TO NEPHROLOGY – I

Total Duration : 3 Hours

Total Marks : 100

- Instructions :**
- 1) Use **blue/black** ball point pen only.
 - 2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
 - 3) **All** questions are **compulsory**.
 - 4) The number to the **right** indicates **full** marks.
 - 5) Draw diagrams **wherever** necessary.
 - 6) Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As it is only for the placement sake, the distribution has been done.
 - 7) **Use** a common answerbook for **all** sections.

1. Long answer question : (1×25=25)
Describe mechanism of tubular transport of Sodium and give diagnostic approach to patient with hyponatremia.
2. Long answer question : (1×25=25)
Describe neurophysiology of urinary bladder filling and emptying. Give evaluation, Classification and management of neurogenic bladder.
3. Short answer question (**any five** out of six) : (5×10=50)
 - a) Hypophosphatemic Rickets
 - b) Hypercalcemia
 - c) Compare and contrast urinary specific gravity versus osmolality
 - d) Treatment of hyperkalemia in CKD
 - e) Give structure and function of podocytes
 - f) FGF- 23 physiology and pathology in health and disease.



13032

D.M. (Nephrology) Examination, Summer 2016
NEPHROLOGY – II

Total Duration : 3 Hours

Total Marks : 100

- Instructions:**
- 1) Use **blue/black** ball point pen only.
 - 2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
 - 3) **All** questions are **compulsory**.
 - 4) The number to the **right** indicates **full** marks.
 - 5) Draw diagrams **wherever** necessary.
 - 6) Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As it is only for the placement sake, the distribution has been done.
 - 7) **Use** a common answerbook for **all** Sections.

1. Long answer question : (1×25=25)
Describe mechanism of immune injury to glomerulus. Give clinical spectrum of presentations of glomerular injury.
2. Long answer question : (1×25=25)
Give risk factors, etiopathogenesis and treatment of contrast induced nephropathy.
3. Short answer question (any five out of six) : (5×10=50)
 - a) Cardiovascular diseases: prevention in CKD.
 - b) C1q Nephropathy.
 - c) Calcimimetics.
 - d) Occupational renal diseases.
 - e) Renal diseases associated with hepatitis B infection.
 - f) Kidney involvement in leptospirosis.



13033

D.M. (Nephrology) Examination, Summer 2016
MEDICINE & SURGERY AS RELATED TO RECENT ADVANCES
NEPHROLOGY – III

Duration : 3 Hours

Total Marks : 100

- Instructions :**
- 1) Use **blue/black** ball point pen only.
 - 2) Do not write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
 - 3) **All** questions are **compulsory**.
 - 4) The number to the **right** indicates **full** marks.
 - 5) Draw diagrams **wherever** necessary.
 - 6) Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As it is only for the placement sake, the distribution has been done.
 - 7) **Use** a common answerbook for **all** sections.

1. Long answer question : (1×25=25)
Describe physiology of peritoneal membrane. Give evaluation of peritoneal membrane function & ultrafiltration failure.
2. Long answer question : (1×25=25)
Define chronic kidney allograft dysfunction. Give causes and evaluation of patient with chronic graft dysfunction.
3. Short answer question (**any five** out of six) : (5×10=50)
 - a) Intradialytic Hypertension.
 - b) Lymphocyte cross match in kidney transplant.
 - c) Malnutrition in Haemodialysis patients.
 - d) Current guidelines for management of CAPD peritonitis.
 - e) Monitoring adequacy of haemodialysis.
 - f) Calcium vs non calcium based phosphate binders in treatment of hyperphosphatemia.



13034

D.M. (Nephrology) Examination, Summer 2016
RECENT ADVANCES IN NEPHROLOGY – IV

Total Duration : 3 Hours

Total Marks : 100

- Instructions :**
- 1) Use **blue/black** ball point pen only.
 - 2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
 - 3) **All** questions are **compulsory**.
 - 4) The number to the **right** indicates **full** marks.
 - 5) Draw diagrams **wherever** necessary.
 - 6) Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As it is only for the placement sake, the distribution has been done.
 - 7) **Use** a common answerbook for **all** Sections.

Long answer question : (1×25=25)

1. Describe advances in understanding of molecular genetics in pathogenesis and management of ADPKD.

Long answer question : (1×25=25)

2. Give etiology, pathogenesis, clinical features, evaluation and management of C3 glomerulopathy.

3. Short answer question (**any five** out of six) : (5×10=50)

- a) Costimulatory blockade in transplantation.
- b) Resistant hypertension-baroreceptor stimulation.
- c) Genomics and Proteomics in Diabetic nephropathy.
- d) Short daily hemodialysis.
- e) Phospholipase A2 receptors in pathogenesis of Membranous Nephropathy.
- f) Eculizumab.