

April-2001

[KD 009]

Sub. Code : 1201

D.M. DEGREE EXAMINATION.

(Higher Specialities)

Branch III — Nephrology

(Revised Regulations)

Paper I — NEPHROLOGY — BASIC SCIENCES

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

1. Classify diuretics according to their sites and mechanisms of action. Discuss the causes and management of diuretic resistance. (25)
2. Describe the determinants of the glomerular filtration rate. Discuss the advantages and disadvantages of the various methods used to determine the glomerular filtration rate. (25)
3. Write briefly on : (5 × 10 = 50)
 - (a) Management of hypercalcemia
 - (b) Medullary cystic disease
 - (c) Contrast medium induced acute renal failure
 - (d) Renal aquaporins
 - (e) Renal involvement in progressive systemic sclerosis.

November-2001

[KE 009]

Sub. Code : 1201

D.M. DEGREE EXAMINATION

(Higher Specialities)

(Revised Regulations)

Branch III — Nephrology

Paper I — NEPHROLOGY — BASIC SCIENCES

Time : Three hours

Maximum : 100 marks

Answer ALL questions

1. Discuss the renal handling of potassium, causes and approach to treatment of hypokalemia. (25)
 2. Discuss the utility of urine analysis in the diagnosis of renal diseases. (25)
 - 3 Write short notes on : (5 × 10 = 50)
 - (a) Regulation of renal blood-flow
 - (b) Role of spiral CT in Nephrology
 - (c) Normal Anion gap acidosis
 - (d) Free-water clearance
 - (e) Diuretic braking phenomenon.
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March-2002

[KG 009]

Sub. Code : 1201

D.M. DEGREE EXAMINATION.

(Higher Specialities)

(Revised Regulations)

Branch III — Nephrology

Paper I — NEPHROLOGY — BASIC SCIENCES

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

1. Discuss the mechanisms of Sodium⁺Transport in the proximal tubule with special reference to membrane transporters. (25)
2. Discuss the pathologic classification of Acute Allograft Rejection and briefly offer a critique on the Banff '97 guidelines. (25)
3. Write briefly on : (5 × 10 = 50)
 - (a) Renal Ammoniogenesis
 - (b) Biocompatibility of Dialysis membranes
 - (c) Chloride resistant metabolic alkalosis
 - (d) Membrane attack complex
 - (e) P. fimbriae.

[KK 009]

Sub. Code : 1201

D.M. DEGREE EXAMINATION.

(Higher Specialities)

(Revised Regulations)

Branch III — Nephrology

Paper I — NEPHROLOGY — BASIC SCIENCES

Time : Three hours

Maximum : 100 marks

Theory : Two hours and
forty minutes

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

A. Essay questions :

(2 × 15 = 30)

(1) Discuss the experimental models in acute renal failure and the future therapeutic options based on the outcome.

(2) Discuss the role of kidney in maintaining acid-base homeostasis.

B. Short notes on :

(10 × 5 = 50)

- (1) Role of transporters in kidney
- (2) Renal prostaglandins
- (3) Leptins in renal diseases
- (4) Tubuloglomerular feedback
- (5) Isotope studies for renovascular hypertension
- (6) Apoptosis in renal diseases
- (7) Cystatin C
- (8) Juxtaglomerular apparatus
- (9) Genetics of alports syndrome
- (10) Counter current mechanism.

[KM 009]

Sub. Code : 1201

D.M. DEGREE EXAMINATION.

(Higher Specialities)

(Revised Regulations)

Branch III — Nephrology

Paper I — NEPHROLOGY — BASIC SCIENCES

Time : Three hours

Maximum : 100 marks

Theory : Two hours and
forty minutes

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

I. Essay : (2 × 15 = 30)

(1) Discuss the role of the kidney in the regulation of Acid base balance.

(2) Discuss the Vasoactive hormones with particular reference to their role in renal diseases.

II. Write notes on : (10 × 5 = 50)

(a) Juxta-glomerular apparatus

(b) Counter-current exchange system

(c) Renal changes in Pregnancy

(d) Role of Nuclear imaging in Nephrology

- (e) Pathogenesis of Edema
 - (f) Tubulo-glomerular balance
 - (g) Diuretic braking phenomenon
 - (h) Estimation of Renal Plasma flow
 - (i) Evaluation and Management of Hematuria
 - (j) Importance of Urine analysis in diagnosing renal diseases.
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[KO 009]

Sub. Code : 1201

D.M. DEGREE EXAMINATION.

(Higher Specialities)

(Revised Regulations)

Branch III — Nephrology

Paper I — NEPHROLOGY — BASIC SCIENCES

Time : Three hours

Maximum : 100 marks

**Theory : Two hours and
forty minutes**

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

I. Essay : (2 × 15 = 30)

(1) Discuss the Role of AT₁ and AT₂ Receptors in the kidney in Health and Disease.

(2) Discuss the Role of the kidney in maintenance of potassium balance.

II. Write notes on : (10 × 5 = 50)

(a) Renal Auto regulation.

(b) Mechanisms of Renal Acidification.

(c) Serum cystatin C.

(d) Clinical utility of Renal Biopsy in Renal disease.

(e) Role of Nephron in Renal Disease.

(f) Aquaporins.

(g) Urine protein measurement application in screening for Renal Disease.

(h) Organic Anion Transport by Renal Tubule.

(i) Transtubular potassium gradient.

(j) Handling of phosphate by the kidney.

August-2006

[KP 009]

Sub. Code : 1201

D.M. DEGREE EXAMINATION.

(Higher Specialities)

(Revised Regulations)

Branch III – Nephrology

Paper I — NEPHROLOGY – BASIC SCIENCES

Time : Three hours Maximum : 100 marks

Theory : Two hours and Theory : 80 marks
forty minutes

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

I. Essay :

(1) Discuss uric acid handling by the kidney and its role in progression of renal failure. (20)

(2) Bartter Syndromes and related Salt-losing Tubulopathies. (15)

(3) Discuss biochemical changes in Brain in Uremia. (15)

II. Write short notes on : (6 × 5 = 30)

(a) Complement and the kidney

(b) Role of aldosterone in chronic kidney disease

(c) Hyperlipidemia in nephritic syndrome

(d) Renal biopsy in patients with type 2 diabetes mellitus

(e) Primary Hyperoxalurias

(f) Tubuloglomerular feedback (TGF).

[KQ 009]

Sub. Code : 1201

D.M. DEGREE EXAMINATION.

(Higher Specialities)

(Revised Regulations)

Branch III — Nephrology

Paper I — NEPHROLOGY – BASIC SCIENCES

Time : Three hours

Maximum : 100 marks

Theory : Two hours and
forty minutes

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

I. Essay :

1. Name the major membrane transporters in the nephron and consequences of their mutations. Discuss basic principles of tubular transport mechanisms. (20)
2. Outline renal handling of potassium. Discuss approach to Hypokalaemic patient. (15)
3. Discuss aetiology, pathogenesis, clinical features and management of hepatorenal syndrome. (15)

II. Write Short notes : (6 × 5 = 30)

1. Chloride resistant metabolic alkalosis
 2. Management of Hypercalcaemia
 3. Cerebral salt wasting
 4. Cystinosis
 5. Investigation of haematuria
 6. Dent's disease.
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August 2008

[KT 009]

Sub. Code: 1201

D.M. DEGREE EXAMINATION

(Higher Specialities)

(Revised Regulations)

Branch III -Nephrology

Paper I– NEPHROLOGY – BASIC SCIENCES

Q.P. Code: 161201

Time: Three hours

Maximum: 100 Marks

ANSWER ALL QUESTIONS

Draw suitable diagrams wherever necessary.

I. Essays:

2 x 20 = 40 Marks

1. Regulation of glomerular filtration and methods of measuring GFR.
2. Renal and extrarenal regulation of potassium and INHERITED disorders of its metabolism.

II. Write short notes on:

10 x 6 = 60 Marks

1. Complement and the kidney.
 2. Renal fanconi syndrome.
 3. Juxta-glomerular apparatus.
 4. V² receptor antagonists in PKD.
 5. Nephrogenic diabetes insipidus.
 6. Counter-current multiplier mechanism.
 7. Inherited disorders of hypophosphatemia.
 8. HMG-COA reductase inhibitors and the kidney.
 9. Cerebral salt wasting syndrome versus SIADH.
 10. Biology and role of Tamm-horsfall glycoprotein.
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August 2009

[KV 009]

Sub. Code: 1201

D.M. DEGREE EXAMINATION

(Higher Specialities)

Branch III – Nephrology

(Revised Regulations)

Paper I – NEPHROLOGY – BASIC SCIENCES

Q.P. Code: 161201

Time: Three hours

Maximum: 100 Marks

Answer ALL questions

Draw suitable diagrams wherever necessary.

I. Essays:

2 x 20 = 40

1. Pathophysiology of edema formation and management.
2. Mechanisms of renal acidification.

II. Write short notes on:

10 x 6 = 60

1. Tubulo Glomerular feed back.
2. Slit diaphragm.
3. Medullary circulation.
4. Cystinuria.
5. TTKG (Trans tubular potassium gradient).
6. Uremic pruritus.
7. Emerging therapies for amyloidosis.
8. Mycophenolate mofetil (MMF) in renal transplantation.
9. Quotidian hemodialysis.
10. Pathogenesis of collapsing glomerulopathy.

August 2011

[KZ 009]

Sub. Code: 1201

DOCTORATE OF MEDICINE (D.M.) DEGREE EXAMINATION

(SUPER SPECIALITIES)

BRANCH III – NEPHROLOGY

NEPHROLOGY – BASIC SCIENCES

Q.P. Code: 161201

**Time : 3 hours
(180 Min)**

Maximum : 100 marks

Answer ALL questions in the same order.

I. Elaborate on :

	Pages (Max.)	Time (Max.)	Marks (Max.)
1. Discuss renal handling of sodium with emphasis on renal defense mechanisms against hyponatremia.	11	35	15
2. Enumerate the renal physiological changes occurring during pregnancy and discuss on evaluation of renal function during pregnancy.	11	35	15

II. Write notes on :

1. Define strong ion difference and outline on its clinical application.	4	10	7
2. Define – ‘Tubulo Glomerular feedback’ and mention the factors mediating it.	4	10	7
3. Gestational diabetes insipidus – outline the cause and management.	4	10	7
4. Pathogenesis of hypercalcemia of malignancy.	4	10	7
5. Interpretation of water deprivation test.	4	10	7
6. Pathology of ‘Cast nephropathy’.	4	10	7
7. Explain the mechanism of ‘Aldosterone escape’.	4	10	7
8. Role of Tamm-Horsfall protein in health and disease.	4	10	7
9. Determinants of Glomerular filtration rate.	4	10	7
10. Enumerate urinary acidification mechanisms.	4	10	7

[LB 009]

AUGUST 2012

Sub. Code: 1201

D.M – NEPHROLOGY

Paper – I NEPHROLOGY – BASIC SCIENCES

Q.P. Code: 161201

Time: 3 hours
(180 Min)

Maximum: 100 marks

Answer ALL questions in the same order.

I. Elaborate on:

Pages Time Marks
(Max.) (Max.) (Max.)

- | | | | |
|---|----|----|----|
| 1. How do you investigate a patient suspected to have renal tubular acidosis, outline the management of type 1 renal tubular acidosis. | 16 | 35 | 15 |
| 2. Role of protein restriction in dietary management of chronic kidney disease stage 4, write out the diet for a 55 year old male with stage 4 chronic kidney disease, who is not a diabetic. | 16 | 35 | 15 |

II. Write notes on:

- | | | | |
|---|---|----|---|
| 1. What is tubular maximum, define renal glycosuria and its clinical implications. | 4 | 10 | 7 |
| 2. Factors affecting glomerular filtration rate, what are the methods available to estimate it. | 4 | 10 | 7 |
| 3. Mode of action and indications for the use of Metolazone. | 4 | 10 | 7 |
| 4. Genetics of polycystic kidney disease and the implications of this. | 4 | 10 | 7 |
| 5. Indications for the combined use of angiotensin converting enzyme inhibitors and angiotensin receptor blockers advantage or not. | 4 | 10 | 7 |
| 6. What are the prognostic factors in a case of IgA nephropathy. | 4 | 10 | 7 |
| 7. Role of fish oil in management of renal diseases. | 4 | 10 | 7 |
| 8. What is the fractional excretion of sodium, its diagnostic significance. | 4 | 10 | 7 |
| 9. What is Cystatin C and what is its usefulness in clinical practice. | 4 | 10 | 7 |
| 10. Use of diuretics in non oedematous states. | 4 | 10 | 7 |

FEBRUARY 2013

[LC 068]

Sub. Code: 1411

**D.M-NEUROLOGY
Paper – I BASIC SCIENCES
Q.P. Code:161411**

**Time: 3 hours
(180 Min)**

Maximum: 100 Marks

I.Elaborate on:

(2x15 marks=30 marks)

1. Anatomy and physiology of limbic system. Write in detail about various manifestations of dysfunctions of limbic System.
2. Write in detail about venous drainage of brain and brain stem, Pathophysiology of cerebral venous thrombosis and its clinical manifestations.

II Write short notes on:

(10x 7 marks=70 marks)

1. Clinical manifestations of Vernet syndrome.
2. Biochemistry and clinical features of syndrome of inappropriate ADH.
3. Describe the clinical features of Superior orbital fissure syndrome.
4. Write about Myophosphorylase deficiency muscle diseases.
5. Embryology and clinical features of basilar invagination.
6. Biochemistry of arterial thrombus formation.
7. Neurological manifestations of Herpes Simplex Virus infection.
8. Describe about Plasmodium falciparum infestation of the nervous system.
9. Write about Genetically inherited epilepsies.
10. Usefulness of Sural nerve biopsy in diagnosis of various Peripheral neuropathies

D.M. – NEPHROLOGY
Paper – I NEPHROLOGY – BASIC SCIENCES
Q.P.Code: 161201

Time: Three Hours

Maximum: 100 marks

I. Elaborate on:

(2X15=30)

1. Regulation of acid base balance by the kidney. Write about the various forms of renal tubular acidosis.
2. Anatomy of renal blood vessels and regulation of renal blood flow.

II. Write notes on:

(10X7=70)

1. What is the normal role of calcium sensing receptor? Specify the regulation of PTH secretion through the CaSR. What conditions characterize mutations involving CaSR?
2. Explain the anatomy of the juxta glomerular apparatus. Define its role in volume regulation.
3. What are the hormones secreted by the kidney? What are their roles in homeostasis?
4. What are the various types of carbonic anhydrase inhibitors located in the kidney? Explain their role in renal physiology. Write briefly about the conditions associated with their deficiency.
5. What are the components of innate immune system? Mention their role in handling infections.
6. What is anion gap? Detail its role in identifying acidosis?
7. Write briefly on: Glomerulotubular balance and tubuloglomerular feedback.
8. Describe the structure of erythropoietin receptor. Mention the mechanism of action of different hematopoietic agents through the receptor.
9. What are the anatomical and physiological changes that happen in pregnancy with regard to the kidney?
10. What is Bartters syndrome? What are the electrolyte imbalances seen?

(LE 009)

FEBRUARY 2014

Sub. Code:1201

D.M. – NEPHROLOGY
Paper – I NEPHROLOGY – BASIC SCIENCES
Q.P.Code: 161201

Time: Three Hours

Maximum: 100 marks

I. Elaborate on:

(2X15=30)

1. Methods of estimating Glomerular Filtration Rate – advantages and fallacies of each method.
2. Magnesium handling by the kidney. Enumerate the various causes of Hypomagnesemia.

II. Write notes on:

(10X7=70)

1. Juxtaglomerular apparatus
2. Mechanisms of edema formation
3. Use of electron microscope in renal pathology
4. Basiliximab
5. Newer drugs in management of Hepatitis B.
6. Diagnostic work up in a patient having a fresh seroconversion to Hepatitis C.
7. Heyman's Nephritis.
8. Diagnosis of Genito urinary Tuberculosis
9. Transtubular potassium gradient
10. Genetics of Alports syndrome.

[LF 009]

AUGUST 2014

Sub. Code: 1201

D.M. – NEPHROLOGY

Paper I – NEPHROLOGY – BASIC SCIENCES

Q. P. Code: 161201

Time: Three Hours

Maximum: 100 Marks

Answer ALL questions in the same order.

I. Elaborate on:

(2 x 15 = 30)

1. What are the different methods to assess GFR?
What are the drawbacks of different formulas to calculate eGFR?
What are the KDIGO Guidelines to assess GFR in different categories of patients ?
2. Discuss the role of Electron Microscopy in the diagnosis & evaluation of Kidney diseases.
How will you prepare & transport the specimen for EM study?

II. Write notes on:

(10 x 7 = 70)

1. What is Pressure Natriuresis? What is its role in normal physiology?
What are the implications in the context of Essential Hypertension?
2. FGF 23.
3. T Cell activation.
4. Reverse Osmosis.
5. Renal Magnesium handling.
6. Anatomy & Physiology of Peritoneal water transport.
7. APOL-1 gene.
8. Neurogenic control of lower Urinary tract.
9. Alternate pathway of Complement activation & its importance in renal diseases.
10. Ammoniogenesis.
