

Reg. No.

MANIPAL ACADEMY OF HIGHER EDUCATION
DM (NEPHROLOGY) DEGREE EXAMINATION – DECEMBER 2023

SUBJECT: PAPER I

Monday, December 11, 2023

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

✍ **Long questions:**

1. Describe Potassium balance and management of hypokalemia
(20 marks)

2. Describe the ultra-structure of Glomerulus and role of podocyte in Health and disease
(20 marks)

3. **Write short notes on:**

3A. Tubulo glomerular feedback

3B. Role of ultrasound in kidney imaging

3C. Renal physiology in pregnancy

3D. Angiotensin receptors

3E. Organic anion transport in kidney tubules

3F. Mechanism of renal fibrosis

(10 marks × 6 = 60 marks)



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SUBJECT: PAPER II

Tuesday, December 12, 2023

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

✍ **Long questions:**

1. Describe Etiology, pathogenesis, pathophysiology, Management of infection related glomerulonephritis.

(20 marks)

2. Describe mechanisms, pathogenesis, pathology and management of renovascular hypertension.

(20 marks)

3. **Write short notes on:**

3A. Radiocontrast nephropathy

3B. Fabry's Disease

3C. Reflux nephropathy

3D. Snake bite associated acute Kidney Injury

3E. Sodium Glucose Transport (SGLT2) Inhibitors

3F. Management of Immunoglobulin A (IgA) Nephropathy

(10 marks × 6 = 60 marks)



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SUBJECT: PAPER III

Wednesday, December 13, 2023

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

✍ **Long question:**

1. Discuss classification, characteristics of hemodialysis membranes and features of dialyzer reuse. (20 marks)

2. Describe strategies for renal transplant across blood group barriers. (20 marks)

3. **Write short notes on:**

- 3A. Hemoperfusion
- 3B. MTor inhibitors
- 3C. Hypotension in hemodialysis
- 3D. Prophylaxis against infections in kidney transplant
- 3E. Assessment of peritoneal dialysis adequacy
- 3F. Recurrent Glomerular disease in Kidney transplant

(10 marks × 6 = 60 marks)



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SUBJECT: PAPER IV

Thursday, December 14, 2023

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ Answer ALL the questions.

✍ Long questions:

1. Discuss the pathophysiology, pathogenesis of lupus nephritis and management of resistant lupus nephritis.

(20 marks)

2. Describe Genetic diagnosis of kidney disease and its use in chronic kidney disease of unknown etiology

(20 marks)

3. Write short notes on:

3A. Novel desensitization therapies in kidney transplant.

3B. Bioengineering kidneys.

3C. Nonpharmacological management of hypertension.

3D. Immune tolerance.

3E. Biomarkers of acute kidney injury.

3F. Non glucose based peritoneal dialysis solutions.

(10 marks × 6 = 60 marks)

