

**NEPHROLOGY**

**PAPER-I**

Time: 3 hours  
Max. Marks:100

NEPH/D/19/20/I

**Important Instructions:**

- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

**Write short notes on:**

1. a) Vascularization and innervation of the kidneys. 5+5  
b) Describe the structural and functional changes with clinical relevance to aging kidneys.
2. a) Describe the determinants of Glomerular Filtration Rate (GFR). 5+5  
b) Compare and contrast different methods of measured Glomerular Filtration Rate (mGFR).
3. Discuss pathophysiology of acute kidney injury(AKI) with detailed reference to its experimental models. 10
4. Pathophysiology of hyperphosphatemia in Chronic Kidney Disease (CKD). 10
5. Describe complement pathways and complement mediated glomerular diseases. 5+5
6. a) Describe renin angiotensin system. 5+5  
b) Explain the role of renin angiotensin aldosterone pathway blockade in diabetic nephropathy.
7. a) Describe reverse osmosis (RO) water plant system for a dialysis unit. 4+2+4  
b) How ultrapure water is different from RO water?  
c) Write a note on extracorporeal management of poisoning.
8. a) Classify renal tubular acidosis. 2+(2+2+2+2)  
b) Discuss the approach, clinical features, laboratory diagnosis and management of distal renal tubular acidosis.
9. a) Describe innate and adaptive immune system? 5+5  
b) Write a short note on tolerance of allograft.
10. Describe approach and management of metabolic alkalosis. 5+5

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