

**NEPHROLOGY**

**PAPER- I**

**Time : 3 hours**  
**Max. Marks : 100**

**NEPHRO/D/11/20/I**

**Attempt all questions in order.**  
**Each question carries 10 marks.**

1. Discuss the mechanism of 1, 25 dihydroxy Vitamin D resistance in renal failure and its implications. (10)
2. Discuss the mechanism of sodium re-absorption in :-
  - a. Proximal tubules (4)
  - b. Loop of Henle (2)
  - c. Distal collecting duct (4)
3. Define transplant tolerance. Describe three mechanisms leading to transplant tolerance. (3+7)
4. Discuss the physiology of aquaporin 1 receptors. Write the distribution of aquaporin receptors in kidney. (6+4)
5. Discuss the changes in kidney and urinary tract during pregnancy:
  - a. Anatomic changes (3)
  - b. Renal hemodynamics (3)
  - c. Changes in acid-base metabolism (3)
  - d. Time taken to reverse these changes after pregnancy (1)
6.
  - a. Define nephrogenic diabetes insipidus. (2)
  - b. List four causes of nephrogenic diabetes insipidus. (4)
  - c. Write treatment of nephrogenic diabetes insipidus. (4)
7. Discuss the embryogenesis of human kidney. (10)
8.
  - a. Illustrate the structure of glomerular filtration barrier. (3)
  - b. Enumerate the function of glomerular filtration barrier. (1)
  - c. List 5 diseases associated with hereditary defect in podocytes and briefly discuss them. (6)
9.
  - a. Discuss shortcomings of KDOQI Classification of Chronic Kidney Disease (CKD). (5)
  - b. Discuss daily hemo-dialysis in CKD. (5)
10.
  - a. What is peritoneal equilibration test? (3)
  - b. What is modified peritoneal equilibration test? (3)
  - c. Write usefulness of PET for patients undergoing peritoneal dialysis. (4)

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**PAPER- II**

**Time : 3 hours**  
**Max. Marks : 100**

**NEPHRO/D/11/20/II**

**Attempt all questions in order.**  
**Each question carries 10 marks.**

1. a. What are the complications of central venous catheterization for hemodialysis? (4)  
b. Describe measures to prevent catheter related infection. (6)
2. a. Discuss the diagnosis of peritoneal dialysis related peritonitis. (3)  
b. What are the risk factors for peritonitis? (4)  
c. List settings when CAPD catheter needs to be removed. (3)
3. a. Enumerate the risk factors for transmission of HCV infection in dialysis patient. (2)  
b. How can you prevent HCV infection transmission in dialysis unit? (3)  
c. Discuss management of HCV infection in a patient with chronic kidney disease stage IV on dialysis. (5)
4. Discuss membranous glomerulonephritis:  
a. Etiopathogenesis (5)  
b. Management of lupus membranes nephropathy (5)
5. a. What is dialysis disequilibrium syndrome? (2)  
b. Discuss its pathogenesis. (4)  
c. How to prevent and manage dialysis disequilibrium syndrome? (4)
6. Discuss risk factors, clinical features, evaluation and management of Polyoma Virus nephropathy. (2+2+3+3)
7. Discuss snake bite induced acute kidney injury under following headings:  
a. Pathogenesis (4)  
b. Clinical features; and (3)  
c. Management (3)
8. Discuss:-  
a. Fibrillary glomerulonephritis (5)  
b. Collapsing glomerulonephritis (5)
9. a. Classify Hemolytic Uremic Syndrome. (3)  
b. Discuss the pathogenesis of Hemolytic Uremic Syndrome. (4)  
c. Discuss the management of atypical Hemolytic Uremic Syndrome. (3)
10. Discuss contrast associated nephropathy and its preventive strategies. (10)

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**NEPHROLOGY**

**PAPER- III**

**Time : 3 hours**

**NEPHRO/D/11/20/III**

**Max. Marks : 100**

**Attempt all questions in order.**

**Each question carries 10 marks.**

1. a. List cross match methods used in renal transplantation. (3)  
b. Discuss their clinical usefulness. (3)  
c. Discuss management of a patient with positive cross match. (4)
2. Discuss role of mTOR inhibitors in renal transplant:  
a. Mechanism of action (2)  
b. When a patient should be initiated on mTOR inhibitors? (4)  
c. Write definitive indications for indicating mTOR inhibitors. (4)
3. a. Enumerate renal involvement in HIV. (4)  
b. Discuss HIV associated nephropathy. (4)  
c. Discuss other glomerular involvement in HIV positive patients. (2)
4. Discuss Fabry's disease under following heads:  
a. Pathogenesis (3)  
b. Clinical features (2)  
c. Diagnosis (2)  
d. Management (3)
5. a. Define Calcimimetic agents. (3)  
b. Write classification of Calcimimetic agents. (3)  
c. Define role of calcimimetics in chronic kidney disease. (4)
6. a. Discuss renal transplantation in HIV positive patient. (5)  
b. Discuss post transplant lympho-proliferative disorder:  
i) Risk factors (2)  
ii) Treatment (3)
7. a. What is the concept of Biocompatibility? (2)  
b. Compare various dialysis membranes in terms of Biocompatibility. (3)  
c. Discuss extra corporeal therapies for Myeloma. (5)
8. a. What is Bone Morphogenic Protein-7(BMP-7)? (2)  
b. Discuss role of BMP-7 in renal growth and tubular maturation. (5)  
c. Discuss potential role of BMP-7 in treatment of renal diseases. (3)
9. a. HEPCIDIN: Role in anemia of CKD (3)  
b. Discuss newer molecules for anemia management, their mode of action and advantages. (7)
10. a. Define active stone former. (2)  
b. Write causes of active stone former. (3)  
c. How to investigate active stone formers? (3)  
d. Write management of active stone formers. (2)

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