

NEPHROLOGY
PAPER – I

Time : 3 hours
Max. Marks : 100

NEPH/D/12/20/I

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

1. Discuss the trade off hypothesis in chronic kidney disease. 10
2. Discuss the significance of anion gap in metabolic acidosis under the following heads: 2+2+6
 - a) High anion gap metabolic acidosis.
 - b) Normal blood anion gap metabolic acidosis
 - c) Urinary anion gap & its clinical relevance.
3. a) What is reactive oxygen species (ROS)? 2+8
b) Discuss role of ROS in glomerulonephritis and chronic kidney disease progression.
4. a) Enumerate the causes of Focal Segmental Glomerulosclerosis (FSGS). 2+6+2
b) Describe histomorphologic types of FSGS.
c) How is classification related to prognosis?
5. a) Discuss the pathogenesis of adult onset polycystic kidney disease (ADPKD). 5+5
b) Write short notes on novel therapies for ADPKD.
6. a) What is brain stem death? 3+4+3
b) Discuss the diagnosis of brain stem death?
c) Enumerate the steps to be followed prior to organ retrieval?
7. a) Enumerate slow continuous renal replacement therapies. 4+6
b) Discuss the advantages and disadvantages of slow continuous renal replacement therapies over intermittent hemodialysis.
8. a) Define recombinant DNA technology. 2+3+5
b) Write the steps used in recombinant DNA technology.
c) Write the utility of recombinant DNA technology in kidney disease.
9. a) What are toll like receptors? 1+3+3+3
b) Discuss their role in ischemic reperfusion injury.
c) Discuss the role of toll like receptors in sepsis acute kidney injury.
d) Discuss the role of toll like receptors in native immunity and graft selection.
10. a) Write the diagnostic criteria of syndrome of inappropriate ADH (SIADH) secretion. 3+4+3
b) Outline the management of SIADH.
c) How do you differentiate SIADH from cerebral salt wasting?

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PAPER – II

Time : 3 hours

NEPH/D/12/20/II

Max. Marks : 100

Attempt all questions in order.

Each question carries 10 marks.

1. Discuss pregnancy in a patient with lupus nephritis under following heads: 2+2+4+2
 - a) What is the risk to the mother?
 - b) What is the risk to the child?
 - c) Diagnosis of lupus flare and management of lupus nephritis during pregnancy.
 - d) What is the ideal time to conceive in a lady patient with lupus nephritis?

2.
 - a) Discuss the newer classification (Oxford) of IgA nephropathy. 7+3
 - b) What is its prognostic significance?

3. Discuss the glomerular diseases with organized deposits, their diagnosis and their management. 10

4.
 - a) Discuss the clinical presentation of CMV infection. 4+4+2
 - b) Discuss the strategies for management of CMV infection in renal transplant recipient.
 - c) What is the management of ganciclovir resistant CMV infection?

5. Discuss renal vein thrombosis under the following heads: 3+2+2+3
 - a) Etiology
 - b) Clinical features
 - c) Diagnostic work up
 - d) Management

6.
 - a) Define hepatorenal syndrome(HRS). 2+3+2+3
 - b) Discuss classification and pathogenesis of hepatorenal syndrome.
 - c) Write differential diagnosis of HRS.
 - d) Discuss management of HRS.

7.
 - a) Define ultrafiltration failure in peritoneal dialysis(PD). 2+3+5
 - b) What are the strategies of using PD in patient with ultrafiltration failure?
 - c) Discuss briefly newer PD solutions.

8.
 - a) What are the clinical presentations of classical polyarteritis nodosa (PAN)? 3+4+3
 - b) What are its renal histologic findings?
 - c) How does one diagnose classic PAN?

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PAPER – II

9. a) Discuss the mechanism of hemodialysis induced hemolysis. 4+3+3
b) What are its clinical features?
c) How is hemodialysis induced hemolysis managed?
10. Discuss type IV renal tubular acidosis under the following headings: 3+2+2+3
a) Pathophysiology.
b) Causes.
c) Investigations.
d) Treatment.

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PAPER – III

Time : 3 hours
Max. Marks : 100

NEPH/D/12/20/III

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

1. Discuss pre-eclampsia under the following heads: 5+2+3
 - a) Current concept
 - b) Prevention
 - c) Management

2.
 - a) Define acute kidney injury. 2+6+2
 - b) Enumerate the RIFLE & AKIN criteria for acute kidney injury.
 - c) What are the advantages of using these criteria?

3.
 - a) What are the components of a water treatment system used for hemodialysis? 4+3+3
 - b) What are the standards for dialysis water as per AAMI or EDTA guidelines?
 - c) What is ultrapure water?

4. Discuss renal syndrome associated with lead toxicity. 10

5.
 - a) What is a calcimimetic agent? 2+1+7
 - b) Name the calcimimetic agents.
 - c) Discuss the mechanism of action and its use in patients on maintenance hemodialysis.

6.
 - a) What is a highly sensitized renal transplant recipient? 2+2+4+2
 - b) What are the causes of high sensitization?
 - c) What are the strategies available to transplant a highly sensitized recipient?
 - d) Write a protocol for desensitization?

7.
 - a) What is plasma exchange? 2+6+2
 - b) Describe role of plasma exchange in renal diseases.
 - c) What are the contraindications for plasma exchange?

8.
 - a) What is a biomarker? 2+3+3+2
 - b) What are the potential biomarkers for early diagnosis of AKI?
 - c) What are the advantages of using the new biomarkers in AKI over the conventional markers like serum creatinine?
 - d) How is NGAL measured?

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PAPER – III

9. a) What are monoclonal antibodies? 2+4+4
b) Mention the diagnostic use of monoclonal antibodies in nephrology.
c) Discuss therapeutic use of monoclonal antibodies in nephrology.
10. a) Define the class-I HLA system. 2+2+6
b) Discuss structure of class-I HLA.
c) Write clinical significance of class-I HLA in nephrology.
