

NEPHROLOGY
PAPER-I

Time: 3 hours
Max. Marks:100

NEPH/J/20/20/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. Vasoactive peptides in kidneys: 3+5+2
 - a) Enumerate vasoactive peptides in acting in kidneys.
 - b) Their role electrolyte exchange regulation.
 - c) Clinical utility of endothelin antagonists.
2. Clinical studies: 7+3
 - a) Compare and contrast observational studies with randomised clinical trials.
 - b) Analysis of variance and statistical significance.
3. Plasma cell dyscrasias: 3+3+4
 - a) Classification.
 - b) Diagnostic criteria of monoclonal gammopathy of renal significance.
 - c) Light chain induced renal damage.
4. Hypokalemia: 5+3+2
 - a) Diagnostic approach to a patient with hypokalemia.
 - b) Enumerate renal abnormalities in prolonged hypokalemia.
 - c) Management of Bartter's syndrome.
5. Peritoneal dialysis: 4+3+3
 - a) Relevance of PET test in CAPD.
 - b) What is three pore model of peritoneal membrane?
 - c) Define ultrafiltration failure in PD and its types.
6. Anaemia in chronic kidney disease: 4+3+3
 - a) Kidney's response to hypoxia.
 - b) Role of hepcidin.
 - c) Role of HIF stabilizers.
7. Magnesium metabolism: 4+3+3
 - a) Enumerate factors affecting reabsorption of magnesium in the kidney.
 - b) Pathophysiology of hypomagnesemia induced hypokalemia.
 - c) Describe pharmacologic management of hypomagnesemia.

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| 8. | Podocytopathy:
a) Podocyte pathophysiology.
b) Mechanism of podocyte injury in focal and segmental glomerulosclerosis.
c) Role of parietal epithelial cell activation in glomerulus. | 4+4+2 |
| 9. | a) Describe the T cell receptor and antigen presenting cell interaction.
b) Costimulatory blockade. | 5+5 |
| 10. | Acute kidney injury in special situations:
a) COVID-19 infection.
b) Therapy with immune checkpoint inhibitors. | 5+5 |
