Question Paper

Exam Date & Time: 22-Apr-2022 (10:00 AM - 01:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST SEMESTER M.Sc. RENAL REPLACEMENT THERAPY AND DIALYSIS TECHNOLOGY DEGREE EXAMINATION - APRIL 2022
SUBJECT: RRT5103 - KIDNEY DISEASE AND DIALYSIS THERAPY
(2021 SCHEME)

Marks: 100 **Duration: 180 mins.**

Answer all the questions.

1)	Explain the types of peritoneal dialysis. Compare and contrast the peritoneal dialysis modalities with each other.	(20)
2)	Outline the cardiovascular disorders in chronic kidney disease.	(20)
3A)	Illustrate the components of a hydraulic circuit in a hemodialysis machine. List the hydraulic circuit alarms and their management during hemodialysis.	(10)
3B)	Classify the stages of acute kidney injury based on AKIN, RIFLE & KDIGO guidelines.	(10)
3C)	Explain the complications and management of hypertension in hemodialysis patients.	(10)
3D)	Explain pyelonephritis and its management.	(10)
4A)	Illustrate the water source and planning for hemodialysis water treatment plant.	(5)
4B)	List the advantages and disadvantages of different types of temporary vascular access.	(5)
4C)	Explain how dialysis prescription in pregnancy is different from regular maintenance hemodialysis.	(5)
4D)	Define residual kidney function and outline its effect on dialysis adequacy.	(5)

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Question Paper

Exam Date & Time: 23-Apr-2022 (10:00 AM - 01:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST SEMESTER M.Sc. RENAL REPLACEMENT THERAPY AND DIALYSIS TECHNOLOGY DEGREE EXAMINATION - APRIL 2022
SUBJECT: RRT5101 - ANATOMY AND PHYSIOLOGY RELATED TO KIDNEY AND DIALYSIS
(2021 SCHEME)

Marks: 100 **Duration: 180 mins.**

Answer all the questions.

1)	Explain the structure and functions of juxtaglomerular apparatus. Outline the special features of renal blood supply.	(20)
2)	Explain the structure and histology of the peritoneum with the help of a neat labelled diagram. Outline the role of peritoneum in peritoneal dialysis.	(20)
3A)	Explain the functions of total body water. Outline the abnormalities related to water balance.	(10)
3B)	Explain the urine concentration - dilution process.	(10)
3C)	Explain blood coagulation pathways. List any three indications for blood transfusion.	(10)
3D)	Outline the differences between two types of nephrons. Which type of nephrons are involved in urine concentration and dilution.	(10)
4A)	Outline the role of ADH in water balance.	(5)
4B)	Define renal clearance and explain its importance in the assessment of kidney function.	(5)
4C)	Explain the systemic and pulmonary blood circulation system.	(5)
4D)	Define lymphatic system and outline its functions.	(5)

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MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST SEMESTER M.Sc. RENAL REPLACEMENT THERAPY AND DIALYSIS TECHNOLOGY DEGREE EXAMINATION - APRIL 2022
SUBJECT: RRT5102 - MICROBIOLOGY AND PHARMACOLOGY RELATED TO KIDNEY AND DIALYSIS
(2021 SCHEME)

Marks: 100 **Duration: 180 mins.**

Answer all the questions.

1)	Explain the classification and clinical use of diuretics in chronic kidney disease. List the indications and adverse effects of diuretics.	(20)
2)	Define universal precaution. Illustrate the infection control measures followed in the hospital.	(20)
3A)	Explain the vascular access-related infection in hemodialysis patients.	(10)
3B)	Outline the side effects of Non-steroidal anti-inflammatory drugs(NSAIDs) in kidney disease patients and their mechanism of action. What are the other alternative safer drugs which can be used as analgesics in kidney disease?	(10)
3C)	Illustrate sampling methods and collection sites for R.O water cultures in the hemodialysis unit.	(10)
3D)	Explain the pharmacokinetics of vancomycin drug dosage, indications, and adverse effects in chronic kidney disease.	(10)
4A)	Classify RAAS blockers and list the indications for its use in chronic kidney disease.	(5)
4B)	Outline the newer anticoagulants used in hemodialysis.	(5)
4C)	List the types of phosphate binder and their adverse effects.	(5)
4D)	Outline the causative organisms of urinary tract infection.	(5)

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