Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Renal Dialysis Technology Degree Examination – 29-May-2024

Time: Three Hours | Max. Marks: 80 Marks

CONCEPT OF RENAL DISEASES – (RS-2)

Q.P. CODE: 1247

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) 2 x 10 = 20 Marks

1. Define acute renal failure. Write classification and management of acute renal failure
2. Discuss about pregnancy associated renal diseases
3. Explain the causes, classification, diagnosis and management of urinary tract infection

SHORT ESSAYS (Answer any Six) 6 x 5 = 30 Marks

4. Explain about glomerulonephritis
5. Clinical manifestations of CKD in detail
6. Nephrolithiasis
7. Tumors of kidney
8. Discuss reflux nephropathy along with diagram
9. Explain asymptomatic urinary abnormalities
10. Write in brief about nephrotic syndrome and the pathogenesis of edema in nephrotic syndrome
11. Describe about Congenital kidney disease

SHORT ANSWERS (Answer any Ten) 10 x 3 = 30 Marks

12. Nephritic syndrome
13. Uremic bleed
14. Causes of significant haematuria
15. Causes of renal parenchymal hypertension
16. Renal osteodystrophy
17. List of foods rich in protein
18. Normal values of
    a) Serum Albumin b) Serum phosphorus c) Serum Creatinine
19. Explain TSAT
20. Normal urine output per day. Define Oliguria, Anuria
21. Staging of CKD
22. Alport syndrome
23. Treatment for acute pyelonephritis

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Renal Dialysis Technology Degree Examination – 04-Jun-2024

Time: Three Hours | Max. Marks: 80 Marks

Pharmacology Related to Haemo and Peritoneal Dialysis – (RS-2)

Q.P. CODE: 1248

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) 2 x 10 = 20 Marks

1. Enumerate drugs used in shock. How does Dopamine act? What are it's uses and adverse effects?
2. **Classify disinfectants. Describe the actions, mode of use and residual effects of formalin as a disinfectant.**
3. Mention different types of dialysis. Write about peritoneal dialysis.

SHORT ESSAYS (Answer any Six) 6 x 5 = 30 Marks

4. Mannitol
5. Aminoglycosides
6. Phenobarbitone
7. Plasma expanders
8. Dose modification in renal patients
9. Haemodialysis concentrates
10. Lithium
11. Furosemide

SHORT ANSWERS (Answer any Ten) 10 x 3 = 30 Marks

12. Two clinical uses of erythropoietin
13. **Two uses and adverse effects of enalapril**
14. Vitamin D analogues
15. **Name two low molecular weight heparins and their advantages over heparin.**
16. Two uses of beta blockers
17. Calcium channel blockers
18. Name two drugs used in hypertensive emergencies.
19. Name two antihistaminic drugs and two uses.
20. Potassium exchange resins
21. Name two potassium sparing diuretics and write three adverse effects caused by them.
22. Phosphate binders
23. Name two complications of haemodialysis.

*****

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Renal Dialysis Technology Degree Examination – 06-Jun-2024

Time: 3 Hours | Max. Marks: 40 Marks

APPLIED ANATOMY (RS2)
Q.P. CODE: 1249

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.
(Note: Both QP Codes 1249 and 1250 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any ONE) 1 x 10 = 10 Marks

1. Describe urinary bladder in detail with its blood supply.
2. Describe kidney under the following headings: Gross features, coverings, blood supply and applied anatomy.

SHORT ESSAYS (Answer any THREE) 3 x 5 = 15 Marks

3. Folds of peritoneum related to urinary bladder.
4. Arch of aorta.
5. Renal angle and its clinical importance.
6. Intravenous Pyelography.

SHORT ANSWERS (Answer any FIVE) 5 x 3 = 15 Marks

7. Name the lobes of prostate. Add a note on applied anatomy.
8. Clinical importance of median cubital vein.
9. Name any three branches of femoral artery.
10. **Name the constructions of ureter.**
11. Formation, termination of great saphenous vein.
12. Draw a neat labelled diagram of histology of kidney.

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Renal Dialysis Technology Degree Examination – 06-Jun-2024

Time: 3 Hours | Max. Marks: 40 Marks

PHYSIOLOGY (RS-2)
Q.P. Code: 1250

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary
(Note: Both QP Codes 1249 and 1250 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any One) 1 x 10 = 10 Marks

1. What are the factors affecting GFR? Give its normal value

2. Describe the reabsorption of sodium in the renal tubules with labelled diagram

SHORT ESSAYS (Answer any Three) 3 x 5 = 15 Marks

3. Explain the micturition reflex
4. List any five peculiarities of renal circulation
5. Explain the role of kidney as an endocrine gland
6. Describe insulin clearance and creatinine clearance in detail

SHORT ANSWERS (Answer any Five) 5 x 3 = 15 Marks

7. Define Law of Laplace
8. What is diabetes insipidus?
9. Nutrition in renal disease
10. Write three difference between Juxtaglomerular and cortical nephrons
11. Define metabolic acidosis and write their compensatory mechanisms
12. What is the function of antidiuretic hormone?

*****

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. (Renal Dialysis Technology) Degree Examination – 10-Jun-2024

Time: 3 Hours Max. Marks: 50 Marks

APPLIED PATHOLOGY (RS2)

Q.P. CODE: 1351

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary.

(Note: Both QP Codes 1351 and 1352 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any One) 1 x 10 = 10 Marks

1. Describe the pathogenesis, gross and microscopy of chronic pyelonephritis.
2. **Enumerate and classify the causes of glomerular diseases. Add a note on Rapidly Progressive Glomerularo Nephritis**

SHORT ESSAYS (Answer any Five) 5 x 5 = 25 Marks

3. Describe the pathogenesis and types of renal stones.
4. Describe urinary microscopy in detail.
5. Describe the renal changes in diabetes mellitus.
6. List the types and causes of peritonitis.
7. Hydronephrosis.
8. Hemolytic uremic syndrome.

SHORT ANSWERS (Answer any Five) 5 x 3 = 15 Marks

9. List the causes of chronic contracted kidneys.
10. Renal artery stenosis.
11. Draw a neat labeled diagram of normal glomerulus.
12. List the causes of black urine.
13. List the clinical features of nephritic syndrome.
14. Enumerate three cystic diseases of the kidney.

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. (Renal Dialysis Technology) Degree Examination – 10-Jun-2024

Time: 3 Hours Max. Marks: 50 Marks

MICROBIOLOGY (RS2)

Q.P. Code: 1352

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.

(Note : Both QP Codes 1351 and 1352 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any One) 1 x 10 = 10 Marks

1. List the bacteria causing urinary tract infection. Describe the methods of collection of urine sample for culture and write briefly on laboratory diagnosis of UTI.
2. What is catheter related infection? Write briefly on the precautions to be taken while inserting a central venous catheter and method of diagnosis of catheter related infections.

SHORT ESSAYS (Answer any Five) 5 x 5 = 25 Marks

3. Aspergillosis.
4. Human immunodeficiency virus.
5. Gram stain.
6. Hepatitis B virus, routes of transmission and prevention.
7. Atypical mycobacteria.
8. Waste management.

SHORT ANSWERS (Answer any Five) 5 x 3 = 15 Marks

9. Antibiotic resistance in bacteria.
10. Gluteraldehyde.
    or
    Salmonellosis.
11. Method and timing of collection of blood for culture.
12. Mucormycosis.
13. Acid fast stain.
14. Hepatitis C virus.

*****

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Renal Dialysis Technology Degree Examination – 29-May-2024

Time: Three Hours Max. Marks: 100 Marks

Concepts of Renal Diseases: Clinical Manifestation and its Management (RS-3)

Q.P. CODE: 3300

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Question No.2 Choice) 2 x 10 = 20 Marks

1. Define Nephrotic syndrome, syndrome and secondary causes and describe the pathogenesis of Edema in Nephrotic syndrome.
2. Define acute Kidney failure. Describe classification and management of ARF.
   OR
   Discuss in detail about congenital inherited renal disease.

SHORT ESSAYS (Question No.5 & 10 choice) 10 x 5 = 50 Marks

3. Explain different types of Renal Replacement Therapy.
4. Discuss in detail anemia – causes and management in CKD patients.
5. Nephrolithiasis.
   OR
   Elaborate asymptomatic urinary abnormalities.
6. What are the secondary causes of Nephritic syndrome? Explain any one in detail.
7. Complicated UTI – causes, clinical manifestations management.
8. Explain renal artery stenosis.
9. **Note on vesico ureteric reflex and reflex nephropathy**
10. Renal Osteodystrophy.
    OR
    Uremic pericarditis.
11. Illustrate tumors of Kidney.
12. Explain kidney diseases associated to pregnancy.

SHORT ANSWER (Question No. 15 & 20 choice) 10 x 3 = 30 Marks

13. ADPKD
14. Name three Nephrotoxic drugs.
15. Mention types of Proteinuria.
    OR
    Define diabetic kidney disease.
16. Explain HUS.
17. List three phosphate binders.
18. Staging of CKD.
19. Diet in Haemodialysis.
20. Uremic Pruritis
    OR
    Renal Biopsy.
21. IgA nephropathy – clinical features.
22. Explain pyelonephritis.

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Renal Dialysis Technology Degree Examination – 04-Jun-2024

Time: Three Hours Max. Marks: 50 Marks

Applied aspects of Pathology (RS-3)

Q.P. CODE: 3301

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary

(Note: Both QP Codes 3301 and 3403 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any One) 1 x 10 = 10 Marks

1. Explain in detail the causes and pathogenesis of urinary tract infections.
2. Define End-stage renal disease. Add a note on its cause, pathology and complications.

SHORT ESSAYS (Answer any Five) 5 x 5 = 25 Marks

3. Describe briefly about causes and lab diagnosis of Pyelonephritis.
4. Renal clearance tests.
5. Peritonitis, types, causes and lab diagnosis.
6. Renal changes in Hypertension.
7. Multicystic renal dysplasia.
8. Minimal changes disease.

SHORT ANSWER (Answer any Five) 5 x 3 = 15 Marks

9. Expand CAKUT. List the congenital anomalies of the urinary tract.
10. Define Nephroselerosis.
11. Morphological features of tubular peritonitis.
    Or
    Morphological features of Renal tuberculosis.
12. Ectopic kidney.
13. Specific gravity of urine.
14. Define renal glycosuria.

*****

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Renal Dialysis Technology Degree Examination – 28.05.2024

Time: Three Hours | Max. Marks: 50 Marks

Applied Anatomy Related to Dialysis Technology (RS-3)
Q.P. CODE: 3302

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

(Note: Both QP Codes 3302 and 3402 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any One) 1 x 10 = 10 Marks

1. Describe the course, branches and applied aspects of femoral artery
2. Describe the gross anatomy of urethra (male and female) and give its applied aspects

SHORT ESSAYS (Answer any Five) 5 x 5 = 25 Marks

3. Describe microscopic structure of kidney
4. External jugular vein
5. Greater omentum
6. Applied aspects of peritoneum
7. Radial artery
8. Anomalies of kidney

SHORT ANSWER (Answer any FIVE) 5 x 3 = 15 Marks

9. Hilum of kidney
10. Inguinal hernia
11. Median cubital vein
12. Epiploic foramen
13. Difference between PCT and DCT
14. Transpyloric plane

*****

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Renal Dialysis Technology Degree Examination – 28.05.2024

Time: Three Hours Max. Marks: 50 Marks

APPLIED PHYSIOLOGY RELATED TO DIALYSIS TECHNOLOGY (RS-3)

Q.P. CODE: 3402

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

(Note: Both QP Codes 3302 and 3402 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any One) 1 x 10 = 10 Marks

1. Describe the mechanism of auto regulation of renal blood flow and its effect on GFR
2. Define hemostasis and blood coagulation. Describe the intrinsic mechanism of blood coagulation. Add a note on anticoagulants

SHORT ESSAYS (Answer any Five) 5 x 5 = 25 Marks

3. Discuss the role of Renin-angiotensin system on renal function
4. Explain the counter current multiplies system
5. Write the role of kidney in acid base balance
6. Define plasma clearance for inulin. Give the normal value. Explain its clinical application
7. Describe how sodium is re absorbed by renal tubule
8. List the hormones acting on kidneys and explain their physiological importance

SHORT ANSWER (Answer any Five) 5 x 3 = 15 Marks

9. Give the normal serum concentration of following –
   A) Calcium
   B) Phosporous
   C) Uric acid
   D) Creatinine
10. Clinical significance of Prothrombin time and bleeding time
11. Metabolic alkalosis
12. Causes and symptoms of Hypernatremia and Hyperkalemia
13. Give the serum concentration of the following:
    A) Glucose B) Urea - Mention the conditions in which these values increase
14. Para amino hippuric acid clearance

*****

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Renal Dialysis Technology Degree Examination – 04-Jun-2024

Time: Three Hours | Max. Marks: 50 Marks

Applied aspects of Microbiology (RS-3)

Q.P. CODE: 3403

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

(Note: Both QP Codes 3301 and 3403 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any One) 1 x 10 = 10 Marks

1. Enumerate the organisms causing UTI. Describe the laboratory diagnosis of urinary tract infections in dialysis patient and add a note on its prevention.
2. Enumerate the organism causing Hepatitis and describe HBV in detail.

SHORT ESSAYS (Answer any Five) 5 x 5 = 25 Marks

3. Gram's staining – procedure and interpretation.
4. Infection control practices.
   Or
   Femoral access infection
5. Autoclave.
6. Categories of disinfectants.
7. Opportunistic infections in HIV.
8. Testing for quality of water.

SHORT ANSWER (Answer any FIVE) 5 x 3 = 15 Marks

9. Name three fungal culture media.
10. Name three bacterial stains used in laboratory.
11. Name three antibiotic resistance bacteria.
    Or
    Aspergillosis
12. Name three chemical disinfectants.
13. Name three gram negative bacteria.
14. Name three anerobic culture media.

*****

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Renal Dialysis Technology Degree Examination – 10-Jun-2024

Time: Three Hours | Max. Marks: 100 Marks

Pharmacology Related to Haemodialysis and Peritoneal Dialysis (RS-3)

Q.P. CODE: 3303

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Question No.2 Choice) 2 x 10 = 20 Marks

1. Classify anticoagulants. Write the mechanism of action, uses and adverse effects of Heparin.
2. Name the different routes of drug administration. Write the advantages and disadvantages of intravenous route.
   OR
   Explain briefly the dialyzable drugs.

SHORT ESSAYS (Question No.5 & 10 choice) 10 x 5 = 50 Marks

3. Indication and dose of Penicillin G
4. Compare and contrast furosemide and hydrochlorothiazide.
5. Protamine sulphate – Indication and dose.
   OR
   Classify antidiuretics with mode of action.
6. Peritoneal dialysis solution.
7. Erythropoietin – mode of action, indication and dose.
8. List the antibiotics used to treat catheter associated infections. Write the mechanism of action of any one of them.
9. Cyclosporine – Indication and adverse effects.
10. **List the vaccines that can be given to dialysis patients and mention what precautions are to be taken?**
    OR
    Phosphate binders formulation and their indication.
11. Parenteral iron.
12. Classify Plasma expanders with indication.

SHORT ANSWER (Question No. 15 & 20 choice) 10 x 3 = 30 Marks

13. Name any three potassium exchange resins.
14. Name any three Nephrotoxic drugs.
15. List any three antibiotics used for anaerobic infections.
    OR
    List any three antibiotics used for staphylococcus infection.
16. Name any three positive inotropes.
17. Explain what is continuous renal replacement therapy?
18. Name any three calcium channel blockers.
19. Name any three antihypertensives.
20. Name any three antiplatelet drugs.
    OR
    Name any three thrombolytic drugs.
21. Name any three potassium sparing diuretics.
22. Vitamin D - preparation and their indication.

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Renal Dialysis Technology Degree Examination – 12-Jun-2024

Time: Three Hours Max. Marks: 100 Marks

Basics of Renal Dialysis Technology (RS-3)

Q.P. CODE: 3304

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Question No.2 Choice) 2 x 10 = 20 Marks

1. Describe the anticoagulation techniques used in hemodialysis patients.
2. With the help of neat labelled diagram explain water treatment plant.
   OR
   Describe briefly about various equipments used in dialysis and its monitoring.

SHORT ESSAYS (Question No.5 & 10 choice) 10 x 5 = 50 Marks

3. Causes of cramps during dialysis, explain the management and prevention.
4. Explain dialysis disequilibrium syndrome, causes, management and prevention.
5. List different performance tests done in dialyzer reprocessing. Justify its importance. Explain fibre bundle volume.
   OR
   Explain pre dialysis and post dialysis assessment.
6. Define intradialytic hypotension. Explain the causes, management and prevention.
7. What is conductivity? Explain the composition of hemodialysis solution and mixing ratio.
8. Elaborate type A - dialyser reactions (anaphylactic).
9. Define osmosis and diffusion. Explain factors affecting osmosis and diffusion.
10. Describe how to prevent the spread of blood born viruses in dialysis unit.
    OR
    Explain BCLS (Basic Cardiac Life Support) and causes of cardiac arrest during Hemodialysis.
11. Explain Allen's test and write its importance.
12. Explain the physiology of peritoneal dialysis.

SHORT ANSWER (Question No. 15 & 20 choice) 10 x 3 = 30 Marks

13. Define TMP.
14. Write the antidote for heparin. Write its dose.
15. Write rule of 6's in arterio venous fistula.
    OR
    Write any three immediate complications of temporary catheter insertion.
16. Write the management of needle stick injury.
17. Note on biomedical waste management protocol in hemodialysis unit.
18. List any three indications for peritoneal dialysis.
19. Write the modalities of renal replacement therapy.
20. Which is the best vascular access for haemodialysis and why?
    OR
    Causes and management of itching in dialysis patients.
21. Causes of high venous pressure during hemodialysis.
22. List the clinical complications of dialyzer reprocessing.

*****

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Renal Dialysis Technology Degree Examination – 21-Nov-2024

Time: Three Hours | Max. Marks: 80 Marks

CONCEPT OF RENAL DISEASES – (RS-2)

Q.P. CODE: 1247

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) 2 x 10 = 20 Marks

1. What is acute kidney injury? Write the causes, 'RIFLE' classification and management of acute kidney injury.
2. Write in detail about congenital renal disorders.
3. What is obstructive uropathy? Write the causes, diagnosis and management.

SHORT ESSAYS (Answer any Six) 6 x 5 = 30 Marks

4. Classification and diagnosis for urinary tract infection.
5. Write the risk factors and diagnosis for renal tumors.
6. Write a short note on nephrotic syndrome.
7. What is ARPKD?
8. Write about pre-eclampsia in pregnancy.
9. List the stages of CKD and management.
10. Discuss about asymptomatic urinary abnormalities.
11. Explain about renal vascular disease and hypertension.

SHORT ANSWERS (Answer any Ten) 10 x 3 = 30 Marks

12. Define CKD.
13. Indications for dialysis.
14. What is azotemia?
15. What is the dietary recommendation for protein in dialysis patient?
16. How to manage hyperkalemia in CKD?
17. Write any three antihypertensive drugs.
18. Name the microorganisms causing UTI.
19. What is cystitis?
20. Normal level of serum urea, creatinine and calcium.
21. What is osteomalacia?
22. Management for anemia in CKD patients.
23. Mention the types of kidney stones in adult.

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Renal Dialysis Technology Degree Examination – 21-Nov-2024

Time: Three Hours Max. Marks: 100 Marks

Concepts of Renal Diseases: Clinical Manifestation and its Management (RS-3)

Q.P. CODE: 3300

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Question No.2 Choice) 2 x 10 = 20 Marks

1. Define CKD. What are the stages of CKD? Discuss in detail the clinical manifestation and management according to the stage of CKD.
2. Discus in detail about the congenital and inherited renal disease.
   OR
   Discuss about pregnancy associated renal disease.

SHORT ESSAYS (Question No.5 & 10 choice) 10 x 5 = 50 Marks

3. Reno vascular hypertension.
4. Post-streptococcal Glomerulonephritis.
5. Nephrolithiasis.
   OR
   Tumors of Kidney.
6. Polycystic kidney disease clinical manifestations and treatment.
7. Reflux Nephropathy.
8. Classification and management of UTI.
9. Acute renal failure definition and classification.
10. Explain asymptomatic urinary abnormalities.
    OR
    Discuss renal replacement therapies in practice.
11. Define nephrotic syndrome and its management in brief.
12. Write in brief the pathogenesis of Edema in nephrotic syndrome.

SHORT ANSWER (Question No. 15 & 20 choice) 10 x 3 = 30 Marks

13. Name basic nutrition and food to be avoided in pre dialysis.
14. Define hematuria and enlist common causes of hematuria.
15. Treatment for acute pyelonephritis
    OR
    Renal biopsy.
16. Name three historical primary causes of Nephrotic syndrome.
17. Renal osteodystrophy.
18. Causes of anuria.
19. Renal cell carcinoma.
20. Microalbuminuria.
    OR
    Name common organisms causing UTI.
21. Intradialytic hypotension – treatment.
22. The normal ranges of : a) Hb b) Potassium c) Phosphorus

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Renal Dialysis Technology Degree Examination – 26-Nov-2024

Time: Three Hours | Max. Marks: 80 Marks

Pharmacology Related to Haemo and Peritoneal Dialysis – (RS-2)

Q.P. CODE: 1248

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) 2 x 10 = 20 Marks

1. Classify anti-hypertensives. Discuss the mechanism of action, uses and adverse effects of ACE inhibitors
2. Classify anticoagulants. Discuss the pharmacological actions, uses and adverse effects of heparin
3. Classify phosphate binders. Discuss the actions, uses and adverse effects of calcium containing phosphate binders

SHORT ESSAYS (Answer any Six) 6 x 5 = 30 Marks

4. What are the advantages and disadvantages of intramuscular route of drug administration?
5. Potassium sparing diuretics
6. Write a note on acetate-based dialysis solution
7. Calcium channel blockers
8. What is the importance of chemical disinfectants in dialysis therapy?
9. Write a note on crystalloids
10. Erythropoiesis stimulating agents
11. Protamine sulphate

SHORT ANSWERS (Answer any Ten) 10 x 3 = 30 Marks

12. Disadvantages of using formalin in dialysis therapy
13. Lithium
14. Antiplatelet agents
15. Disadvantages of potassium sparing diuretics in dialysis patients
16. What is bioavailability?
17. Name the advantages of subcutaneous route of drug administration
18. Examples of low molecular weight heparin
19. Folic acid supplementation
20. Three examples of parenteral iron preparations
21. Adverse effects of furosemide
22. Three examples of dialyzable drugs
23. Example for vitamin D analogues

*****

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Renal Dialysis Technology Degree Examination – 26-Nov-2024

Time: Three Hours | Max. Marks: 50 Marks

Applied aspects of Pathology (RS-3)

Q.P. CODE: 3301

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary

(Note: Both QP Codes 3301 and 3403 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any One) 1 x 10 = 10 Marks

1. What are the causes of peritonitis? Write in detail about Tubercular peritonitis.
2. Define renal failure. Discuss the causes, pathology and diagnosis of chronic renal failure.

SHORT ESSAYS (Answer any Five) 5 x 5 = 25 Marks

3. Describe nephritic syndrome.
4. Describe etiopathogenesis and morphology of membranous nephropathy.
5. Discuss laboratory diagnosis of UTI.
6. **Renal changes in diabetes mellitus**
7. Pathology of ESRD.
8. Discuss IgA nephropathy.

SHORT ANSWER (Answer any FIVE) 5 x 3 = 15 Marks

9. Name three drugs causing interstitial nephritis.
10. Alport syndrome.
11. Name three types of renal stones and their causes.
12. Agenesis of the kidney.
13. **List three causes of acute renal failure.**
14. **Renal artery stenosis**

*****

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Renal Dialysis Technology Degree Examination – 26-Nov-2024

Time: Three Hours Max. Marks: 50 Marks

Applied aspects of Microbiology (RS-3)

Q.P. CODE: 3403

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

(Note: Both QP Codes 3301 and 3403 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any One) 1 x 10 = 10 Marks

1. Define opportunistic infections. Write a note on opportunistic infections in dialysis patients.
2. Write in detail about HIV infection. Add a note on its transmission and prevention.

SHORT ESSAYS (Answer any Five) 5 x 5 = 25 Marks

3. Cryptococcosis.
4. Subclavian vascular access infection.
5. Sample collection methods for UTI.
6. Lab diagnosis of HCV infection.
7. Antibiotic sensitivity testing.
8. Vaccination for HBV.

SHORT ANSWER (Answer any FIVE) 5 x 3 = 15 Marks

9. Name three Gram negative bacteria.
10. Significant bacteriuria.
11. Incineration.
12. ZN staining.
13. Name three RNA virus.
14. **Hepatitis A Virus infection.**

*****

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Renal Dialysis Technology Degree Examination – 28-Nov-2024

Time: 3 Hours | Max. Marks: 40

APPLIED ANATOMY (RS-2)
Q.P. CODE: 1249

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary
(Note: Both QP Codes 1249 and 1250 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any ONE) 1 x 10 = 10 Marks

1. Describe the urinary bladder under the following:
    a) Parts
    b) Ligaments
    c) Interior
    d) Applied aspects

2. Describe external carotid artery under the following:
    a) Origin and termination
    b) Relations
    c) Branches and distribution

SHORT ESSAYS (Answer any THREE) 3 x 5 = 15 Marks

3. Histology of kidney
4. Branches of brachial artery
5. Constrictions of ureter
6. Lesser sac of peritoneum

SHORT ANSWERS (Answer any FIVE) 5 x 3 = 15 Marks

7. Superior vena cava – formation and termination
8. Juxta – glomerular apparatus
9. Lobes of prostate
10. Nephron
11. Coverings of kidney
12. Name any four developmental anomalies of kidney

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Renal Dialysis Technology Degree Examination – 28-Nov-2024

Time: 3 Hours Max. Marks: 40 Marks

PHYSIOLOGY (RS-2)
Q.P. Code: 1250

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary
(Note: Both QP Codes 1249 and 1250 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any One) 1 x 10 = 10 Marks

1. Explain the counter current mechanism in the kidney with neat diagrams
2. Describe in detail the mechanism of urine formation

SHORT ESSAYS (Answer any Three) 3 x 5 = 15 Marks

3. What is GFR? Explain the factors that regulate GFR
4. Any two hormones secreted by kidney and their mechanisms
5. Describe buffer systems of the body fluids
6. Explain mechanism of coagulation

SHORT ANSWERS (Answer any Five) 5 x 3 = 15 Marks

7. What is Artificial Kidney?
8. Explain structure of Juxta Glomerular Apparatus with neat labelled diagram
9. Explain PAH clearance
10. Sources of H^+ ion production
11. Auto regulation
12. What is Haemophilia?

*****

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Renal Dialysis Technology Degree Examination – 28-Nov-2024

Time: Three Hours Max. Marks: 50 Marks

Applied Anatomy related to Dialysis Technology (RS-3)

Q.P. CODE: 3302

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

(Note: Both QP Codes 3302 and 3402 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any One) 1 x 10 = 10 Marks

1. Explain kidney – External features, coverings, relations, blood supply and applied aspect.
2. Explain prostate gland – External features, coverings, relations, blood supply and applied aspects.

SHORT ESSAYS (Answer any Five) 5 x 5 = 25 Marks

3. Inguinal hernia.
4. Femoral artery.
5. Epiploic foramen.
6. Branches of brachial artery.
7. External jugular vein.
8. **Coverings of Kidney.**

SHORT ANSWER (Answer any FIVE) 5 x 3 = 15 Marks

9. Greater omentum.
10. Branches of Arch of Aorta.
11. Parts of Male Urethra.
12. Structure in the hilum of Kidney.
13. Mesonephros.
14. Name the three branches of external carotid artery.

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Renal Dialysis Technology Degree Examination – 28-Nov-2024

Time: Three Hours | Max. Marks: 50 Marks

Applied Physiology related to Dialysis Technology (RS-3)

Q.P. CODE: 3402

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

(Note: Both QP Codes 3302 and 3402 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any One) 1 x 10 = 10 Marks

1. List the various renal function tests. Explain plasma clearance test.
2. Draw a Nephron. Name the process in urine formation. Explain re absorption of glucose and sodium in the renal tubule.

SHORT ESSAYS (Answer any Five) 5 x 5 = 25 Marks

3. Define glomerular filtration rate. Give the normal values. Explain the factors effecting it.
4. Re absorption of water in the renal tubule and factors effecting it.
5. Describe the role of kidneys in the regulation of blood pH.
6. Auto regulation of renal blood flow.
7. Explain the intrinsic mechanism of blood coagulation.
8. Role of kidneys in electrolyte balance.

SHORT ANSWER (Answer any FIVE) 5 x 3 = 15 Marks

9. List the functions of Proximal Conveluted Tubule of nephron
10. What is the normal renal blood flow per minute? What will happen to renal blood flow during pregnancy?
11. Name the hormones acting on the kidneys. Mention the actions of any one.
12. Define bleeding time. What is its significance? Name a condition in which bleeding time prolongs.
13. What is hypokalemia and hyponatremia? Mention the causes.
14. What is the normal 24 hours urinary output of urea and creatinine?

*****

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Renal Dialysis Technology Degree Examination – 28-Nov-2024

Time: 3 Hours Max. Marks: 40

APPLIED ANATOMY (RS-2)
Q.P. CODE: 1249

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary
(Note: Both QP Codes 1249 and 1250 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any ONE) 1 x 10 = 10 Marks

1. Describe the urinary bladder under the following:
    e) Parts
    f) Ligaments
    g) Interior
    h) Applied aspects

2. Describe external carotid artery under the following:
    d) Origin and termination
    e) Relations
    f) Branches and distribution

SHORT ESSAYS (Answer any THREE) 3 x 5 = 15 Marks

3. Histology of kidney
4. Branches of brachial artery
5. Constrictions of ureter
6. Lesser sac of peritoneum

SHORT ANSWERS (Answer any FIVE) 5 x 3 = 15 Marks

7. Superior vena cava – formation and termination
8. Juxta – glomerular apparatus
9. Lobes of prostate
10. Nephron
11. Coverings of kidney
12. Name any four developmental anomalies of kidney

*****

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Renal Dialysis Technology Degree Examination – 28-Nov-2024

Time: 3 Hours | Max. Marks: 40 Marks

PHYSIOLOGY (RS-2)

Q.P. Code: 1250

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary
(Note: Both QP Codes 1249 and 1250 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any One) 1 x 10 = 10 Marks

1. Explain the counter current mechanism in the kidney with neat diagrams
2. Describe in detail the mechanism of urine formation

SHORT ESSAYS (Answer any Three) 3 x 5 = 15 Marks

3. What is GFR? Explain the factors that regulate GFR
4. Any two hormones secreted by kidney and their mechanisms
5. Describe buffer systems of the body fluids
6. Explain mechanism of coagulation

SHORT ANSWERS (Answer any Five) 5 x 3 = 15 Marks

7. What is Artificial Kidney?
8. Explain structure of Juxta Glomerular Apparatus with neat labelled diagram
9. Explain PAH clearance
10. Sources of H^+ ion production
11. Auto regulation
12. What is Haemophilia?

*****

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Renal Dialysis Technology Degree Examination – 28-Nov-2024

Time: Three Hours | Max. Marks: 50 Marks

Applied Anatomy related to Dialysis Technology (RS-3)

Q.P. CODE: 3302

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

(Note: Both QP Codes 3302 and 3402 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any One) 1 x 10 = 10 Marks

1. Explain kidney – External features, coverings, relations, blood supply and applied aspect.
2. Explain prostate gland – External features, coverings, relations, blood supply and applied aspects.

SHORT ESSAYS (Answer any Five) 5 x 5 = 25 Marks

3. Inguinal hernia.
4. Femoral artery.
5. Epiploic foramen.
6. Branches of brachial artery.
7. External jugular vein.
8. **Coverings of Kidney.**

SHORT ANSWER (Answer any FIVE) 5 x 3 = 15 Marks

9. Greater omentum.
10. Branches of Arch of Aorta.
11. Parts of Male Urethra.
12. Structure in the hilum of Kidney.
13. Mesonephros.
14. Name the three branches of external carotid artery.

*****

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Renal Dialysis Technology Degree Examination – 28-Nov-2024

Time: Three Hours Max. Marks: 50 Marks

Applied Physiology related to Dialysis Technology (RS-3)

Q.P. CODE: 3402

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

(Note: Both QP Codes 3302 and 3402 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any One) 1 x 10 = 10 Marks

1. List the various renal function tests. Explain plasma clearance test.
2. Draw a Nephron. Name the process in urine formation. Explain re absorption of glucose and sodium in the renal tubule.

SHORT ESSAYS (Answer any Five) 5 x 5 = 25 Marks

3. Define glomerular filtration rate. Give the normal values. Explain the factors effecting it.
4. Re absorption of water in the renal tubule and factors effecting it.
5. Describe the role of kidneys in the regulation of blood pH.
6. Auto regulation of renal blood flow.
7. Explain the intrinsic mechanism of blood coagulation.
8. Role of kidneys in electrolyte balance.

SHORT ANSWER (Answer any FIVE) 5 x 3 = 15 Marks

9. List the functions of Proximal Conveluted Tubule of nephron
10. What is the normal renal blood flow per minute? What will happen to renal blood flow during pregnancy?
11. Name the hormones acting on the kidneys. Mention the actions of any one.
12. Define bleeding time. What is its significance? Name a condition in which bleeding time prolongs.
13. What is hypokalemia and hyponatremia? Mention the causes.
14. What is the normal 24 hours urinary output of urea and creatinine?

*****

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. (Renal Dialysis Technology) Degree Examination – 02-Dec-2024

Time: 3 Hours Max. Marks: 50 Marks

APPLIED PATHOLOGY (RS2)

Q.P. Code : 1351

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.

(Note : Both QP Codes 1351 and 1352 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any One) 1 x 10 = 10 Marks

1. Define and classify pyelonephritis. Explain in detail acute pyelonephritis.
2. Give a detailed account of classification of renal diseases.

SHORT ESSAYS (Answer any Five) 5 x 5 = 25 Marks

3. Describe rapidly progressive glomerulonephritis.
4. Describe bacterial peritonitis.
5. List the renal changes in diabetes.
6. Discuss benign Nephrosclerosis with clinical features.
7. Describe autosomal dominant polycystic kidney disease.
8. Discuss about acute tubular necrosis.

SHORT ANSWERS (Answer any Five) 5 x 3 = 15 Marks

9. Name three drugs causing interstitial nephritis.
10. Name three causes of acute renal failure.
11. Name the stages of chronic kidney disease.
12. Name three types of renal stones and their causes.
13. Agenesis of the kidney.
14. Name three causes of hydronephrosis.

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. (Renal Dialysis Technology) Degree Examination – 02-Dec-2024

Time: 3 Hours | Max. Marks: 50 Marks

MICROBIOLOGY (RS2)

Q.P. Code: 1352

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary.

(Note: Both QP Codes 1351 and 1352 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any One) 1 x 10 = 10 Marks

1. Describe the morphology, modes of transmission, pathogenesis and laboratory diagnosis of HIV.
2. Define opportunistic infections. List fungi causing opportunistic infections. Describe in detail about pathogenesis and laboratory diagnosis of Cryptococcus neoformans.

SHORT ESSAYS (Answer any Five) 5 x 5 = 25 Marks

3. Hepatitis B virus morphology and modes of transmission.
4. ELISA.
5. Candidiasis.
6. Laboratory diagnosis of urinary tract infection.
7. Write in brief about blood culture.
8. Universal precautions taken in hospital to prevent infections.

SHORT ANSWERS (Answer any Five) 5 x 3 = 15 Marks

9. Name three RNA viruses.
10. Name three pathogenesis causing nosocomial infections.
11. Name three Gram negative bacteria.
12. Name three species of Aspergillus.
13. Name three disinfectants used in hospital to prevent infections.
14. Name three culture methods used in microbiology laboratory.

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Renal Dialysis Technology Degree Examination – 02-Dec-2024

Time: Three Hours | Max. Marks: 100 Marks

PHARMACOLOGY RELATED TO HAEMODIALYSIS AND PERITONEAL DIALYSIS (RS-3)

Q.P. CODE: 3303

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Question No.2 Choice) 2 x 10 = 20 Marks

1. Classify diuretics. Explain the mechanism of action, uses and side effects of thiazide diuretics
2. Write a note on vasopressors
   OR
   Classify antihypertensive drugs. Explain the mechanism of action and adverse effects of any one ACE inhibitor

SHORT ESSAYS (Question No.5 & 10 choice) 10 x 5 = 50 Marks

3. Mannitol – Indication and mode of action
4. Protamine sulphate – indication, dose and side effects
5. Classify immunosuppressive drugs
   OR
   Vaccines used in dialysis patients
6. Composition of haemodialysis solutions
7. Verapamil – mode of action, indication and adverse effect
8. Role of Folic acid and indication
9. Heparin – mode of action, indication and contraindication
10. Oral iron preparations
    OR
    Classify Oral anticoagulants
11. Write a note on calcium supplements for dialysis patients
12. Write the mechanism of action of beta blockers with two examples and its uses

SHORT ANSWER (Question No. 15 & 20 choice) 10 x 3 = 30 Marks

13. Uses of crystalloids and its advantages
14. Name three positive inotropic agents
15. Citrate coagulation
    OR
    Uses of calcium supplements
16. Enlist the water soluble vitamins
17. Enlist the potassium sparing diuretics
18. Enlist three peripheral vasodilators
19. Side effects of osmotic diuretics
20. Phosphate binders
    OR
    Define Bioavailability
21. Three examples for angiotensin receptor blockers
22. Drugs used in peritonitis

*****

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Renal Dialysis Technology Degree Examination – 04-Dec-2024

Time: Three Hours Max. Marks: 100 Marks

Basics of Renal Dialysis Technology (RS-3)

Q.P. CODE: 3304

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Question No.2 Choice) 2 x 10 = 20 Marks

1. Explain water treatment system used in hemodialysis. What are the quality monitoring for dialysis water.
2. Explain in detail about dialyser reprocessing techniques and clinical concerns in dialyser reprocessing.
   OR
   Explain in briefly about physiology and factors affection of peritoneal transport.

SHORT ESSAYS (Question No.5 & 10 choice) 10 x 5 = 50 Marks

3. Explain about the hemodialysis catheter, types and design with the help of diagram.
4. Write a note on different osmotic agents used in peritoneal dialysis solution.
5. Explain hypotension during hemodialysis, causes management and prevention.
   OR
   Define dialysis disequilibrium syndrome. Explain its causes, management and prevention.
6. With the help of neat labelled diagram, explain different types of dialyzers and semipermeable membranes used in dialysis.
7. Explain different anticoagulation techniques in hemodialysis.
8. Explain the composition of dialysis solution and normal value.
9. Describe the indications of haemodialysis.
10. Explain pre-operative assessment of an arterio venous fistula.
    OR
    Explain infection control practices in dialysis unit.
11. Write the causes, manifestations and management of dialyzer reactions.
12. Write a note on equipments used in dialysis unit and its monitoring.

SHORT ANSWER (Question No. 15 & 20 choice) 10 x 3 = 30 Marks

13. Write the unit of conductivity.
14. Differentiate arterio venous fistula from arterio venous graft.
15. Write about pre-hemodialysis assessment for patients.
    OR
    Causes of hemolysis in patients during hemodialysis.
16. List three precautions to prevent needle stick injury.
17. Explain the ‘Rule of Six’.
18. Define TMP.
19. Causes of high venous pressure during dialysis.
20. How to prevent cramps during hemodialysis.
    OR
    List any three low molecular weight heparin used during hemodialysis.
21. List any three side effects of heparin.
22. List the principles of dialysis.

*****