[LH 0815] **AUGUST 2015** **Sub. Code: 2501**

DIPLOMA IN DIALYSIS TECHNOLOGY

FIRST YEAR

PAPER I – ANATOMY & PHYSIOLOGY, BIOCHEMISTRY & PHARMACOLOGY

Q.P. Code : 842501

Time : Three Hours **Maximum : 100 marks**

Answer ALL questions

I. Elaborate on: **(3 x 10 = 30)**

1. (a) With the help of a suitable diagram, elaborate on the anatomy of the kidneys.
   (b) Explain the physiology of urine formation.
2. (a) Enumerate on the chemical structure on proteins.
   (b) Classify nucleic acids.
   (c) Describe SIX different functions of hormones.
3. (a) Classify anti-hypertensive drugs, giving ONE example for EACH class
   (b) Outline the composition of a hemodialysis concentrate.
   (c) Name THREE drugs that can be readily removed by hemodialysis.

II. Write notes on: **(10 x 5 = 50)**

1. Elaborate on the anatomy of the heart, using suitable diagram.
2. Enumerate on the steps involved in Kreb's cycle, using appropriate diagram.
3. Explain briefly ANY THREE clinical uses and ANY TWO adverse effects of heparin.
4. Elaborate on the various phases in the physiology of digestion.
5. Describe briefly the anatomy and functions of the lungs.
6. Briefly explain the factors affecting enzyme activity.
7. Elaborate on ANY THREE clinical uses and ANY TWO adverse effects of ANY TWO classes of diuretics.
8. Write on the physiology of muscle contraction.
9. Elaborate on the functions of lipids.
10. Explain the role of intravenous fluids in renal diseases.

III. Short Answers on: **(10 x 2 = 20)**

1. Name ANY TWO nephrotoxic antimicrobial drugs.
2. Name ANY TWO disinfectants used to sterilize dialyzers.
3. Name ANY TWO functions of White blood cells.
4. Write ANY TWO contra-indications in using Dextran as a colloidal plasma expander.
5. Name ANY TWO clinical uses of parenteral nutrition.
6. Write ANY TWO functions of the parathyroid gland.
7. Name ANY TWO phosphate binders.
8. Name ANY TWO functions of trace elements.
9. Name ANY TWO clinical uses of parenteral iron therapy.
10. Name ANY TWO pH buffering agents.

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[LJ 0816] AUGUST 2016 **Sub. Code: 2501**

DIPLOMA IN DIALYSIS TECHNOLOGY
FIRST YEAR
PAPER I – ANATOMY & PHYSIOLOGY, BIOCHEMISTRY & PHARMACOLOGY

Q.P. Code: 842501

Time : Three Hours **Maximum : 100 Marks**

Answer All questions.

I. Elaborate on: **(3 x 10 = 30)**

1. Write in Detail on composition of blood and function of blood elements.
2. List the various groups of Anti - Hypertensive Drugs, their actions and adverse effects.
3. Write in detail on acid base homeostasis by kidneys.

II. Write notes on: **(10 x 5 =50)**

1. Antiplatelet agents.
2. Low molecular weight heparin – mechanism of action, uses and dosage forms.
3. Functions of special sense organs.
4. Potassium sparing diuretics – list, mechanism of action, uses and adverse effects.
5. Toxicities of aminoglycosides.
6. Functions of proteins in cell function.
7. Digoxin –mechanism of action, pharmacologic effects, adverse effects, uses.
8. Role of erythropoietin in blood formation and routes and dosage forms.
9. Uses and precautions of crystalloids in renal failure patients.
10. Differentiate Acute and Chronic renal failure.

III. Short answers on: **(10 x 2 = 20)**

1. Adverse effects of loop diuretics.
2. List 4 calcium channel blockers.
3. Brief the various types of potassium exchange resins.
4. Types and functions of coenzymes.
5. Calcitriol.
6. Basal metabolic rate.
7. Composition of peritoneal dialysis fluid.
8. Hydrogen peroxide as antiseptic.
9. List hormones involved bone and mineral homeostasis.
10. Coagulation factors- enumerate.

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[LK 0217] FEBRUARY 2017 **Sub. Code: 2501**

DIPLOMA IN DIALYSIS TECHNOLOGY

FIRST YEAR

PAPER I – ANATOMY AND PHYSIOLOGY, BIOCHEMISTRY AND PHARMACOLOGY

Q.P. Code: 842501

Time : Three Hours **Maximum : 100 Marks**

Answer All questions.

I. Elaborate on: **(3 x 10 = 30)**

1. Pathophysiology of renal disease and edema.
2. List the hormones acting on musculoskeletal system, their functions and deficiency states.
3. Role of erythropoietin in blood formation, indications, contraindications and dosage forms.

II. Write notes on: **(10 x 5 =50)**

1. Mechanism of action, uses and adverse effects of loop diuretics.
2. Peritoneal dialysis fluids-mechanism of action, composition, indication and precautions.
3. Mechanism of action, Uses and Adverse effects of Heparin.
4. Drugs contraindicated and to be used with precaution in chronic renal failure.
5. Define IV Fluids, mode of action, indication, contraindication of I V Fluids.
6. Uses, adverse effects and management of poisoning of Phenobarbitone.
7. Functions of lipids in biological cell membrane.
8. Drugs used in treatment of bronchial asthma.
9. Oral versus intravenous Iron therapy
10. Cotrimoxazole.

III. Short answers on: **(10 x 2 = 20)**

1. Uses of acetazolamide.
2. B complex vitamins deficiency states.
3. Define Henderson Hesselbach equation.
4. Nephrotoxic drugs.
5. Trace elements.
6. Advantage of low molecular weight heparin over heparin.
7. Uses of cephalosporins.
8. Inhalational steroids
9. List the Factors affecting enzyme activity.
10. Mechanism of action of Aspirin as antiplatelet agent.

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[LL 0817] AUGUST 2017 **Sub. Code: 2501**

DIPLOMA IN DIALYSIS TECHNOLOGY

FIRST YEAR

PAPER I – ANATOMY AND PHYSIOLOGY, BIOCHEMISTRY AND PHARMACOLOGY

Q.P. Code: 842501

Time : Three Hours **Maximum : 100 Marks**

Answer All questions.

I. Elaborate on: **(3 x 10 = 30)**

1. Describe in detail the actions, dosage, routes and use of Heparin in Haemodialysis.
2. Describe in detail the different types of proteins and their functions.
3. Physiology of secretion of parathyroid hormone and its functions in bone and mineral homeostasis.

II. Write notes on: **(10 x 5 = 50)**

1. Enumerate the various fat soluble vitamins, their functions, and deficiency states.
2. Write in detail on coagulation cascade and the drugs that affect various factors.
3. Write in detail on the types of inflammation, and the pathophysiology of stages in inflammation.
4. Describe with suitable diagram the structure of nephron and functions of its parts.
5. Detail on protamine sulphate.
6. Phenytoin – mechanism of action, uses and adverse effects.
7. Mechanism of action, uses and adverse effects of Thiazide diuretics.
8. Treatment and follow up of urinary tract infection.
9. Uses of potassium exchange resins.
10. Dosage adjustments for various drugs when used in renal dysfunction.

III. Short answers on: **(10 x 2 = 20)**

1. Composition of hemodialysis concentrate.
2. Adverse effects of residual formalin as disinfectant.
3. List low molecular weight heparins.
4. Explain Lithium toxicity and diuretics.
5. Diclofenac sodium.
6. Advantages of IV route of drug administration.
7. Beta blockers used as antihypertensives.
8. Dopamine - different dosages and its effects on renal vasculature.
9. Symptoms of acute cystitis.
10. Buffers.

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[LM 0218] FEBRUARY 2018 **Sub. Code: 2501**

DIPLOMA IN DIALYSIS TECHNOLOGY

FIRST YEAR

PAPER I – ANATOMY AND PHYSIOLOGY, BIOCHEMISTRY AND PHARMACOLOGY

Q.P. Code: 842501

Time : Three Hours **Maximum : 100 Marks**

Answer All questions.

I. Elaborate on: **(3 x 10 = 30)**

1. Describe in detail on structure and function of kidney with a neat labelled diagram.
2. Write in detail on vitamins and minerals.
3. Write in detail about the diuretics-Definition, classification, actions, side effects and contra indications.

II. Write notes on: **(10 x 5 = 50)**

1. Write short note on erythropoietin.
2. Write short note on protamine sulphate.
3. Write a brief notes on structure and function of Human cell.
4. Write a short note on lung anatomy.
5. Potassium exchange resins-list, mechanism of action, uses and adverse effects.
6. Write short note on suprarenal gland.
7. Short notes on drugs used in dialysis.
8. Classification of proteins and its functions.
9. Write short notes on Fat soluble vitamins.
10. Write short note on structure and functions of organs of hearing.

III. Short answers on: **(10 x 2 = 20)**

1. Name few lymphatic organs.
2. Composition of Blood.
3. Constituents of urine.
4. Functions of Nervous system.
5. Hormones secreted by the pituitary gland.
6. Fluids used in peritoneal dialysis.
7. Molality and Molarity.
8. Side effects of Heparin usage.
9. Cardinal signs of inflammation.
10. Henderson – Hasselbalch equation.

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[LN 0818] AUGUST 2018 **Sub. Code: 2501**

DIPLOMA IN DIALYSIS TECHNOLOGY

FIRST YEAR

PAPER I – ANATOMY AND PHYSIOLOGY, BIOCHEMISTRY AND PHARMACOLOGY

Q.P. Code: 842501

Time : Three Hours **Maximum : 100 Marks**

Answer All questions.

I. Elaborate on: **(3 x 10 = 30)**

1. Write in detail about cross section of kidney and the formation of urine.
2. List the various groups of anti-hypertensive drugs, their actions and adverse effects.
3. Write in detail on lipids and its functions.

II. Write notes on: **(10 x 5 = 50)**

1. Eye.
2. Pharynx.
3. Erythropoietin.
4. Diuretics.
5. Spinal cord.
6. Glycogen metabolism.
7. Low molecular weight Heparin.
8. Fat soluble vitamins.
9. Structure& Function of Lungs.
10. Composition and functions of blood elements.

III. Short answers on: **(10 x 2 = 20)**

1. What is periosteum?
2. Coenzyme.
3. Define pH.
4. Hormones secreted by the pituitary gland.
5. Fluids used in peritoneal dialysis.
6. Molality and Molarity.
7. Prostate gland.
8. Basal Metabolic rate.
9. Define Edema.
10. Inflammation.

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[LO 0219] FEBRUARY 2019 **Sub. Code: 2501**

DIPLOMA IN DIALYSIS TECHNOLOGY

FIRST YEAR

PAPER I – ANATOMY AND PHYSIOLOGY, BIOCHEMISTRY AND PHARMACOLOGY

Q.P. Code: 842501

Time : Three Hours **Maximum : 100 Marks**

Answer All questions.

I. Elaborate on: **(3 x 10 = 30)**

1. Write in detail about structure and function of cardio vascular system.
2. Write in detail on Enzymes-Definition, classification, factors affecting enzyme activity, active site, units of enzyme.
3. Write in detail about the anti-hypertensive drugs.

II. Write notes on: **(10 x 5 = 50)**

1. Write short note on glucose metabolism.
2. Write short note on Heparin including Low molecular weight Heparin.
3. Write a brief notes on female reproductive system.
4. Write a short note on diuretics.
5. Write briefly on stomach with a neat labelled diagram.
6. Classification of proteins and its functions.
7. Short notes on drugs used in dialysis.
8. Write short notes on Fat soluble vitamins.
9. Write short note on structure and functions of organs of vision.
10. Write a brief note on composition and functions of blood elements.

III. Short answers on: **(10 x 2 = 20)**

1. Hydrogen peroxide.
2. Composition of Blood.
3. List 4 beta blockers.
4. Functions of Nervous system.
5. Hormones secreted by the pituitary gland.
6. Define Anatomy and Physiology.
7. Brief on Peritoneal dialysis.
8. Protamine sulphate.
9. Cardinal signs of inflammation.
10. Define erythropoiesis and Leukopoiesis.

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[LP 0819] AUGUST 2019 **Sub. Code: 2501**

DIPLOMA IN DIALYSIS TECHNOLOGY

FIRST YEAR

PAPER I – ANATOMY AND PHYSIOLOGY, BIOCHEMISTRY AND PHARMACOLOGY

Q.P. Code: 842501

Time : Three Hours **Maximum : 100 Marks**

Answer All questions.

I. Elaborate on: **(3 x 10 = 30)**

1. (a) With the help of a suitable diagram, elaborate on the anatomy of the kidneys.
   (b) Explain the physiology of urine formation.
2. Describe in detail the different types of proteins and their functions.
3. Write in detail about diuretics: Definition, classification, actions, side effects and contraindications.

II. Write notes on: **(10 x 5 = 50)**

1. Elaborate on the anatomy of the lungs, using suitable diagram.
2. Write short notes on fat soluble vitamins.
3. Explain briefly ANY THREE clinical uses and ANY TWO adverse effects of heparin.
4. Elaborate on the various phases in the physiology of digestion.
5. Describe briefly the anatomy and functions of the heart.
6. Briefly explain the factors affecting enzyme activity.
7. Elaborate on protamine sulphate.
8. Write on the physiology of muscle contraction.
9. Write short notes on drugs used in dialysis.
10. Write brief note on structure and function of human cell.

III. Short answers on: **(10 x 2 = 20)**

1. Name ANY TWO functions of gall bladder.
2. Name ANY TWO disinfectants used to sterilize dialyzers.
3. Name ANY TWO functions of Red blood cells.
4. Write ANY TWO contra-indications in using Dextran as a colloidal plasma expander.
5. Name ANY TWO clinical uses of parenteral nutrition.
6. Write ANY TWO functions of the thyroid gland.
7. Name ANY TWO beta blockers.
8. Name ANY TWO functions of lipids.
9. Name ANY TWO clinical uses of parenteral iron therapy.
10. Name ANY TWO drugs used in hypotension.

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[LQ 0220] FEBRUARY 2020 **Sub. Code: 2501**

DIPLOMA IN DIALYSIS TECHNOLOGY

FIRST YEAR

PAPER I – ANATOMY AND PHYSIOLOGY, BIOCHEMISTRY AND PHARMACOLOGY

Q.P. Code: 842501

Time : Three Hours **Maximum : 100 Marks**

Answer All questions.

I. Elaborate on: **(3 x 10 = 30)**

1. (a) With the help of a suitable diagram, elaborate on the anatomy of the heart.
   (b) Explain the physiology of urine formation.
2. Describe in detail on lipids and their functions.
3. Write in detail about anti hypertensives: Definition, classification, actions, side effects and contraindications.

II. Write notes on: **(10 x 5 = 50)**

1. Parts of the stomach.
2. Write short notes on adrenal gland.
3. Explain briefly ANY THREE clinical uses and ANY TWO adverse effects of protamine sulphate.
4. Elaborate on glycogen metabolism.
5. Describe briefly the anatomy and functions of the kidney.
6. Briefly explain the factors affecting enzyme activity.
7. Elaborate on Erythropoietin.
8. Write on the physiology of muscle contraction.
9. Write short notes on diuretics.
10. Write brief note on low molecular weight heparin.

III. Short answers on: **(10 x 2 = 20)**

1. Constituents of Urine.
2. Dopamine.
3. Nephrotoxic drugs.
4. Vit. A deficiency.
5. Lymphatic organs.
6. Coenzyme.
7. Henderson Hasselbalch equation.
8. Molality and Molarity.
9. Composition of hemodialysis concentrate.
10. Inhalational steroids.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0321] MARCH 2021 Sub. Code: 2501

(AUGUST 2020 EXAM SESSION)

DIPLOMA IN DIALYSIS TECHNOLOGY

FIRST YEAR (Regulation 2014-2015 & 2018-2019)

PAPER I – ANATOMY & PHYSIOLOGY, BIOCHEMISTRY & PHARMACOLOGY

Q.P. Code : 842501

Time: Three hours **Answer ALL Questions** **Maximum: 100 Marks**

I. Elaborate on: **(3 x 10 = 30)**

1. With the help of a suitable diagram, elaborate on the anatomy of the Digestive system.
2. Describe in detail on proteins and their functions.
3. Write in detail about Dialyzable drugs: Definition, dosage, actions, side effects and administration.

II. Write notes on: **(10 x 5 = 50)**

1. Elaborate on the anatomy of the kidney, using suitable diagram.
2. Write short notes on fat soluble vitamins.
3. Explain briefly on erythropoietin.
4. Elaborate on glucose metabolism.
5. Describe briefly the anatomy and functions of the lungs.
6. Briefly explain the factors affecting enzyme activity.
7. Elaborate on protamine sulphate.
8. Write on the physiology of muscle contraction.
9. Write short notes on diuretics.
10. Write brief note on low molecular weight heparin.

III. Short answers on: **(10 x 2 = 20)**

1. Constituents of Urine.
2. Uses of Cephalosporins.
3. Trace elements.
4. Vitamin B deficiency.
5. Endocrine organs.
6. Enzyme.
7. Uses of Acetazolamide.
8. Functions of Parathyroid gland.
9. Lithium toxicity.
10. Phosphate binders.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0122] JANUARY 2022 Sub. Code: 2501
(FEBRUARY 2021 & AUGUST 2021 EXAM SESSION)

DIPLOMA IN DIALYSIS TECHNOLOGY
FIRST YEAR (Regulation 2014-2015 & 2018-2019)
PAPER I – ANATOMY & PHYSIOLOGY, BIOCHEMISTRY & PHARMACOLOGY
Q.P. Code : 842501

Time: Three hours **Answer ALL Questions** **Maximum: 100 Marks**

I. Elaborate on: **(3 x 10 = 30)**

1. Describe in detail about urine formation.
2. Describe in detail about types and functions of proteins.
3. Enumerate the actions indication, dosage and side effects of intravenous iron.

II. Write notes on: **(10 x 5 = 50)**

1. Draw a neat diagram of nephron.
2. What pharynx.
3. Functions of blood.
4. Types of hormones.
5. Classification of lipids.
6. Balanced diet.
7. Functions of calcium.
8. Dialyzing fluid
9. Uses of hydrogen peroxide
10. Erythropoietin

III. Short answers on: **(10 x 2 = 20)**

1. Name the primary taste
2. Hormones secreted from pancreas
3. Types of respiration
4. Types of neuron
5. Types of muscle
6. Fat soluble vitamins
7. What is basal metabolic rate
8. Mention any two diuretics
9. Function of heparin
10. Functions of uterus.

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